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CONFIDENCE IN LEADERSHIP

REPLICATION OF MURPHY & FARLEY'S EXPLORATORY ANALYSES OF THE UNIT CLIMATE PROFILE

Tzvetanka Dobreva-Martinova
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Prepared for: The Command Group
Defence and Civil Institute of
Environmental medicine
1133 Sheppard Ave., West
Toronto, Canada

Scientific Authority: Megan M. Thompson, Ph.D

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Abstract

The importance of the relationship between leadership and military effectiveness has led the Operational Effectiveness Section of the Directorate of Human Resource Research and Evaluation (DHRRE) to develop the Unit Climate Profile (UCP) Questionnaire. This report provides a brief overview of the conceptual framework within which the UCP was developed as well as brief history of the development of the instrument and definitions of the climate dimensions that it measures. Three major questions raised in earlier research using the UCP were explored in this report.

1) Do unit climate profiles tend to be consistent across deployments and mission theatres?
2) What is the relationship of leadership, morale/cohesion and confidence in leadership and are these relationships consistent across deployments and rank levels?
3) What are the unique effects of positive and negative leadership practices on unit-level morale/cohesion?

Overall, results presented in the annexes to this report indicated that unit climate profiles were fairly consistent across deployments. Moreover, the climate profiles for the different rank categories (e.g., enlisted vs. officers) followed similar patterns. Results of multiple regression analyses presented here suggest that positive leadership practices were the most important factor related to morale and cohesion levels within a unit, regardless of deployment phase. Thus, positive leadership practices might be a potential resource to deal with the decrease in morale/cohesion after the return of the troops to Canada.

These and other findings in the present study are discussed in terms of the potential of the UCP to be used as a diagnostic tool and thus to assist commanding officers in their decision-making regarding the operational readiness of their troops. As well, the findings are discussed in terms of the usefulness of following the dynamics in the confidence in different levels of leadership across a deployment cycle for stimulating efficient military performance.

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Résumé

L'importance de la relation entre le leadership et l'efficacité militaire a incité la Section de l'efficacité opérationnelle du Directeur – Recherche et évaluation en ressources humaines (DRERH) à élaborer le questionnaire relatif au portrait du climat des unités (PCU). Ce rapport donne un bref aperçu du cadre conceptuel dans lequel le PCU a été élaboré, ainsi qu'un bref historique de l'élaboration de l'outil et des définitions des dimensions du climat qu'il mesure. On examine dans ce rapport trois grandes questions soulevées dans le cadre d'études antérieures à l'aide du PCU.

4) Le portrait du climat des unités est-il sensiblement le même pour tous les déploiements et théâtres de mission?
5) Quelle est la relation entre le leadership, le moral/l'esprit de cohésion et la confiance à l'égard des dirigeants? Ces relations sont-elles pareilles dans tous les déploiements et à tous les niveaux hiérarchiques?
6) Quel sont les effets uniques de l'exercice d'un leadership positif et d'un leadership négatif sur le moral/l'esprit de cohésion au sein de l'unité?

Dans l'ensemble, les résultats présentés en annexe au rapport indiquent que le portrait du climat des unités est sensiblement le même pour tous les déploiements. Le portrait du climat dans les différentes catégories hiérarchiques (tel chez les soldats comparativement aux officiers) suit également des courbes semblables. Les résultats d'analyses de régression multiple présentés laissent supposer que les pratiques de leadership positif constituaient le plus important facteur associé au moral et à la cohésion d'une unité, sans égard au stade du déploiement. Ainsi, l'exercice d'un leadership positif pourrait s'avérer un moyen de pallier l'affaiblissement du moral/de l'esprit de cohésion après le retour des militaires au Canada.

Ces constatations et d'autres résultats de l'étude sont examinés quant à la possibilité d'utiliser le PCU comme outil diagnostique et ainsi d'aider les commandants à prendre des décisions en ce qui concerne la disponibilité opérationnelle des troupes. En outre, les constatations sont examinées du point de vue de l'utilité d'un suivi de la variation de la confiance manifestée envers différents paliers de leadership dans un cycle de déploiement aux fins de la stimulation du rendement militaire.

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Executive Summary

Both military research and anecdotal experience have shown that confidence in leadership is an important determinant of battlefield success and of efficient military performance. Several studies (e.g., Bryman, 1992; Burns, 1978; Gal, 1986; Guest, 1996) have shown that a leader's ability to motivate inspires confidence among subordinates and triggers extraordinary levels of performance.

Recognizing the importance of the relation between leadership and military effectiveness, the Operational Effectiveness Section of the Directorate of Human Resource Research and Evaluation (DHRRE) developed the Unit Climate Profile (UCP) Questionnaire. The UCP is a 62-item survey instrument, which provides commanding officers with a method to measure and monitor important human dimensions affecting the operational effectiveness of army units. These dimensions are, morale/cohesion, positive leadership, negative leadership, military ethos, professional morale, ideology, confidence in Section Commander, confidence in Senior Non-Commissioned Officer, confidence in Platoon Commander, confidence in Company Sergeant Major/Squadron Sergeant Major, confidence in Company Commander and confidence in Commanding Officer. This report provides a brief overview of the conceptual framework within which the UCP was developed as well as brief history of the development of the instrument and definitions of the climate dimensions that it measures.

Three major questions raised in earlier research using the UCP were explored in this report. First, do unit climate profiles tend to be consistent across deployments and mission theatres? Second, what is the relationship of leadership, morale/cohesion and confidence in leadership and are these relationships consistent across deployments and rank levels? Is there continuing evidence of post-deployment declines in confidence in leaders first identified by Murphy and Farley (2000)? Third, what are the unique effects of positive and negative leadership practices on unit-level morale/cohesion? To answer these questions, exploratory analyses (descriptive and multiple regression analyses) were performed on survey data from five rotations of CF personnel deployed on operational missions in the Balkans in the 1990s. The total number of deployed personnel surveyed with the UCP was 1543.

Overall, results presented in the annexes to this report indicated that unit climate profiles were fairly consistent across deployments. Specifically, mean scores were very similar for the morale/cohesion, positive leadership, negative leadership, military ethos and professional morale dimensions. Exploration of the confidence scores at the different levels of command revealed greater variability in the mean scores for these domains. Moreover, the climate profiles for the different rank categories (e.g., enlisted vs. officers) followed similar patterns, particularly the domains of morale/cohesion, positive leadership, negative leadership, military ethos and professional morale. The ideology domain produced the lowest mean score in all the profiles and was characterized by considerable variability in the scores for the rank categories in deployments "C", "D" and "E". Contrary to the popular belief that upward movement in the chain of command is associated with downward movement in confidence in leadership, the results presented in this paper showed curvilinearity in the confidence in leadership rather than the predicted

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inverse linear pattern. Findings presented here also suggest that the curvilinear pattern in confidence in leadership hold across peace support missions in different operation theatres.

The interrelationships of confidence in NCOs and confidence in officers with morale/cohesion were NCOs' leadership while confidence in officers seemed to follow a more independent course. also explored. Analyses indicated that morale/cohesion closely co-varied with confidence in

Although exact replication of Murphy and Farley's (2000) findings was not possible, some of the general trends in the unit climate dynamics over the deployment cycle depicted by Murphy and Farley emerged again in the present analyses. Specifically, Murphy and Farley noted a decline in morale and cohesion in the course of the deployment cycle for the three contingents that they studied, particularly in the post-deployment phase. A similar pattern of decline in morale/cohesion and confidence in leadership after the return of the troops to Canada was again observed in the present study. Murphy and Farley suggested that these declines in morale, cohesion and confidence in leadership in the post-deployment phase might be due to more macro-level post-deployment adjustment factors that warrant further study. Given this replication of their initial findings, it seems clear that future research efforts should be directed to the exploration of specific factors that contribute to declines in morale and cohesion in the post-deployment phase.

Results of the regression analyses presented here suggest that positive leadership practices were the most important factor related to morale and cohesion levels within a unit, regardless of deployment phase. Thus, positive leadership practices might be a potential resource to deal with the decrease in morale/cohesion after the return of the troops to Canada. It may be that intensive use of specific positive leadership practices may well facilitate the post-deployment adjustment of the returning peacekeepers.

The results of the regression analyses also suggest a floor effect for the impact of negative leadership on unit morale/cohesion as well as a lack of a ceiling effect for the impact of positive leadership on unit morale/cohesion. The fact that negative leadership practices are not a significant predictor of unit morale/cohesion in the post-deployment phase suggests that efforts to explore the decrease in morale/cohesion in this phase should be directed elsewhere. On the other side, the even stronger effect of positive leadership on unit morale/cohesion in the post-deployment stage suggests that there might be no limit to the extent to which positive leadership may influence the morale and cohesion in a unit.

These and other findings in the present study are discussed in terms of the potential of the UCP to be used as a diagnostic tool and thus to assist commanding officers in their decision-making regarding the operational readiness of their troops. As well, the findings are discussed in terms of the usefulness of following the dynamics in the confidence in different levels of leadership across a deployment cycle for stimulating efficient military performance.

Exploring confidence in leadership throughout the deployment cycle and in relation to factors important to the mission could provide a more thorough understanding of the confidence construct and its dynamics in the course of an operation. Such an understanding can be used by military commanders for building and maintaining trust and confidence in their own leadership as well as enhancing optimal performance of their troops, particularly in the demanding and challenging situations faced by military units.

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Sommaire

La recherche militaire autant que l'expérience anecdotique indiquent que la confiance à l'égard des dirigeants constitue un facteur déterminant de la réussite sur le champ de bataille et de l'efficacité du rendement militaire. Plusieurs études (dont Bryman, 1992; Burns, 1978; Gal, 1986; Guest, 1996) montrent que l'aptitude d'un dirigeant à motiver ses subordonnés inspire la confiance de l'équipe et déclenche des niveaux de rendement extraordinaires.

Reconnaissant l'importance de la relation entre le leadership et l'efficacité militaire, la Section de l'efficacité opérationnelle du Directeur – Recherche et évaluation en ressources humaines (DRERH) a élaboré le questionnaire relatif au portrait du climat des unités (PCU). Il s'agit d'une enquête comportant 62 éléments, qui procure aux commandants un moyen de mesurer et de surveiller des dimensions humaines importantes touchant l'efficacité opérationnelle des unités de l'Armée de terre. Ces dimensions sont le moral/l'esprit de cohésion, un leadership positif, un leadership négatif, l'éthique militaire, le moral professionnel, l'idéologie, la confiance à l'égard du commandant de section, la confiance à l'égard du sous-officier supérieur, la confiance à l'égard du commandant de peloton, la confiance à l'égard du sergent-major de compagnie/d'escadron, la confiance à l'égard du commandant de compagnie et la confiance à l'égard du commandant. Ce rapport donne un bref aperçu du cadre conceptuel dans lequel le PCU a été élaboré, ainsi qu'un bref historique de l'élaboration de l'outil et des définitions des dimensions du climat qu'il mesure.

On examine dans ce rapport trois grandes questions soulevées dans le cadre d'études antérieures à l'aide du PCU. Premièrement, le portrait du climat des unités est-il sensiblement le même pour tous les déploiements et théâtres de mission? Deuxièmement, quelle est la relation entre le leadership, le moral/l'esprit de cohésion et la confiance à l'égard des dirigeants, et ces relations sont-elles pareilles dans tous les déploiements et à tous les niveaux hiérarchiques? Existe-t-il encore des preuves de l'affaiblissement post-déploiement de la confiance à l'égard des dirigeants notée pour la première fois par Murphy et Farley (2000)? Troisièmement, quels sont les effets uniques de l'exercice d'un leadership positif et d'un leadership négatif sur le moral/l'esprit de cohésion au sein de l'unité? Pour répondre à ces questions, on a procédé à des analyses exploratoires (analyses descriptives et analyses à régression multiple) à partir de données d'enquête émanant de cinq groupes d'effectifs des FC affectés en mission opérationnelle dans les Balkans durant les années 90. Au total, on a sondé 1 543militaires déployés à l'aide du PCU.

Dans l'ensemble, les résultats annexés au rapport indiquent que le climat au sein des unités était sensiblement le même pour tous les déploiements. Plus précisément, les cotes moyennes étaient très semblables en ce qui a trait au moral/à l'esprit de cohésion, au leadership positif, au leadership négatif, à l'éthique militaire et au moral professionnel. L'examen des cotes de confiance aux différents paliers de commandement révèle des cotes moyennes plus variées pour ces aspects. Le portrait du climat dans les différentes catégories hiérarchiques (tel chez les soldats comparativement aux officiers) suit également des courbes semblables, particulièrement en ce qui a trait au moral/à l'esprit de cohésion, au leadership positif, au leadership négatif, à l'éthique militaire et au moral professionnel. L'idéologie, le facteur ayant récolté la plus faible cote moyenne, se

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caractérise par une variation marquée des cotes obtenues pour les catégories hiérarchiques dans le cas des déploiements « C », « D » et « E ».

Contrairement à la croyance populaire voulant qu'un mouvement ascendant dans la chaîne de commandement soit associé à une diminution de la confiance à l'égard des dirigeants, les résultats présentés dans cette étude indiquent une tendance curvilinéaire pour la confiance à l'égard des dirigeants plutôt que la tendance linéaire inverse attendue. Les constatations énoncées suggèrent aussi que la curvilinéarité relative à la confiance à l'égard des dirigeants vaut pour toutes les missions de paix sur les différents théâtres opérationnels.

On a aussi examiné la corrélation entre la confiance envers les sous-officiers et envers les officiers et le moral/l'esprit de cohésion. Les analyses indiquent une étroite covariance entre le moral/l'esprit de cohésion et la confiance à l'égard du leadership des sous-officiers, tandis que la confiance envers les officiers semble suivre une courbe plus indépendante.

Même si la répétition exacte des constatations de Murphy et Farley (2000) était impossible, certaines des tendances générales de la dynamique du climat au sein des unités durant le cycle de déploiement que Murphy et Farley avaient illustrées sont ressorties à nouveau dans ces analyses.

Plus précisément, Murphy et Farley ont constaté un affaiblissement du moral et de l'esprit de cohésion durant le cycle de déploiement chez les trois contingents soumis à leur étude, particulièrement au stade post-déploiement. Cette étude a révélé une diminution semblable du moral/de l'esprit de cohésion et de la confiance à l'égard des dirigeants après le retour des soldats au Canada. Selon Murphy et Farley, cette baisse de moral, de cohésion et de confiance à l'égard des dirigeants au stade post-déploiement pourrait être attribuable à des facteurs de réadaptation à plus grande échelle qui demandent à être approfondis. Devant cette récurrence des premières constatations, il semble clair que les travaux de recherche à venir devraient être axés sur les facteurs spécifiques qui contribuent à affaiblir le moral et la cohésion des troupes au stade post-déploiement.

Les résultats des analyses de régression présentés laissent supposer que les pratiques de leadership positif constituaient le plus important facteur associé au moral et à la cohésion d'une unité, sans égard au stade du déploiement. Ainsi, l'exercice d'un leadership positif pourrait s'avérer un moyen de pallier à l'affaiblissement du moral/de l'esprit de cohésion après le retour des militaires au Canada. Il est fort possible que l'emploi intensif de pratiques du leadership positif favorise l'adaptation des soldats de la paix qui rentrent de déploiement.

Les résultats des analyses de régression semblent aussi indiquer un effet de plancher pour l'incidence du leadership négatif sur le moral/l'esprit de cohésion des unités, ainsi que l'absence d'un effet de plafonnement pour l'incidence du leadership positif sur le moral/l'esprit de cohésion des unités. Le fait que l'exercice d'un leadership négatif ne soit pas une variable explicative significative du moral/de l'esprit de cohésion d'une unité au stade post-déploiement donne à penser qu'il faudrait rediriger les énergies visant à examiner l'affaiblissement du moral/de l'esprit de cohésion à ce stade. Par ailleurs, l'incidence encore plus marquée du leadership positif sur le moral/l'esprit de cohésion de l'unité au stade post-déploiement nous porte à croire qu'il pourrait n'y avoir aucune limite à la portée de l'influence d'un leadership positif sur le moral et la cohésion d'une unité.

Ces constatations et d'autres résultats de l'étude sont examinés quant à la possibilité d'utiliser le PCU comme outil diagnostique et ainsi d'aider les commandants à prendre des décisions en ce qui concerne la disponibilité opérationnelle des troupes. En outre, les constatations sont examinées du point de vue de l'utilité d'un suivi de la variation de la confiance manifestée à différents paliers de leadership dans un cycle de déploiement en vue de la stimulation du rendement militaire

L'étude de la confiance manifestée à l'égard des dirigeants durant le cycle de déploiement et par rapport à des facteurs qui sont importants pour la mission pourrait approfondir notre connaissance du concept de la confiance et de sa dynamique en milieu opérationnel. Les commandants militaires pourraient exploiter ces connaissances pour bâtir et maintenir la confiance à l'égard de leur propre leadership et pour rehausser le rendement optimal de leurs troupes, particulièrement dans les situations ardues et exigeantes qu'affrontent les unités militaires.

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Introduction

In his portrayal of human factors that affected combat performance during World War II, Spiegel (1948) indicated that good leadership in the battlefield was a critical determinant of combat effectiveness. He further showed that effective leadership had a great influence on subordinate soldiers and produced good morale, which in turn led to good performance and low psychiatric casualty rate. Other work corroborates the relation between leadership and many important battlefield/combat outcomes. Several studies (e.g., Bryman, 1992; Burns, 1978; Gal, 1986; Guest, 1996) have shown that a leader's ability to motivate inspires confidence among subordinates and triggers extraordinary levels of performance. For instance, Gal (1986) demonstrated that units that expressed high confidence in commanders translated this confidence into more efficient battlefield performance. Thus, successful military performance seems to result from the reciprocity between the influence of the leader on soldiers and the confidence of the soldiers in their leader.

Past large-scale research efforts such as the COHORT (Army Cohesion, Operational Readiness, and Training) studies (e.g., Kirckland, 1989) have attempted to distill the dimensions that underlie optimal leadership. That research (Kirckland, 1989) suggested that effective leaders: (1) were perceived as competent to lead their units effectively in combat; (2) trusted their subordinates, and were themselves trustworthy in their commitment to their troops' personal, professional and familial welfare; and (3) respected their subordinates as fellow professionals, including their off-duty concerns and interests. That account for outcomes related to operational effectiveness is a valuable contribution to an important literature.

The Unit Climate Profile Questionnaire

Recognizing the importance of the relation between leadership and military effectiveness, the Unit Climate Profile (UCP), a survey instrument tapping the major dimensions of military readiness, was developed by the Operational Effectiveness Section of the Directorate of Human Resource Research and Evaluation (DHRRE). The UCP was designed to provide commanding officers with a device to both measure and monitor important human dimensions affecting the operational effectiveness of army units. Unit climate is a multidimensional construct composed of both individual and group level dimensions. Many of the dimensions assessed are common to most work group situations (e.g., supervision, cohesion, group morale, professionalism), while others are unique to a military environment (e.g., combat readiness, confidence in different levels of military command) (Dobreva-Martinova, 1999).

The UCP questionnaire was developed within a conceptual framework proposed by Wild (1988) who postulated that the human dimension of operational readiness was founded on several antecedent variables. These included individual aptitude, combat proficiency, an understanding of the task, individual motivation and the motivational environment. Motivational environment is thought to be composed of individual level factors (personal morale, professional morale and ideology) and small group factors (small group morale, cohesion, stability of unit and cooperation) (Dobreva- Martinova, 1999).

Moreover, Wild (1988) proposed that aspects of leadership, such as leadership behaviours, perceptions of both leaders' competence and concern about their soldiers

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might mediate each of these antecedent variables. He argued that leadership behaviors are an important "filter through which the antecedent variables are integrated into a unified whole" (Wild, 1988, p. 11). Indeed, with the exception of aptitude, every antecedent variable was assumed to be directly affected by leadership (Dobreva-Martinova, 1999).

Reeves and Hansen (1989) adopted this conceptual model to develop a psychometric instrument called Human Dimension Combat Readiness Index Experimental (HDCRI-X) that integrated several pre-existing military questionnaires and assessed many of the aspects of operational readiness proposed in Wild's (1988) model. For instance, as noted in the introduction, perceptions of leadership are fundamental to unit readiness, and comprised an important aspect of the assessment of the HDCRI-X. Following the lead of Wild (1988), some HDCRI-X dimensions measured specific leadership behaviours. Other items assessed soldiers' perceptions of the trust, respect and confidence in their leaders. (It should be noted that these confidence items represent subordinates' perceptions and thus are not objective assessments of commanders' abilities to execute command or of their technical proficiency).

The HDCRI-X was initially administered to 215 Infantry Non-Commissioned Officers (NCOs). Exploratory factor analysis of the resulting data revealed 8 factors that closely mirrored Wild's conceptual model of the human dimensions of operational readiness, and accounted for 53.9 percent of the total variance in HDCRI-X scores. These 8 factors were:

1. Morale/Cohesion - combining the constructs of small group morale (the sense of wellbeing that stems from the group; the degree of confidence, effectiveness, and persistence with which the recognized goals of joint enterprise are pursued); personal morale (the psychological state of mind characterized by a sense of well being, eagerness and willingness to sacrifice); and cohesion (the resultant of all forces acting on members to remain in a group; the bonding together of soldiers in such a way as to sustain their will and commitment to each other, the unit, and the desire to accomplish the mission despite combat or stress).
2. Leadership Skills – consisting of items that describe soldiers' perceptions of their immediate supervisor's leadership skills and behaviours. For example, "My immediate supervisor offers new ideas for solving job-related problems", "My immediate supervisor is willing to listen to any problems", or "My immediate supervisor lets other supervisors interfere with my work group".
3. Ideology – the items that loaded on this factor represent ideas characterizing internalized normative beliefs, legitimacy and commitment.
4. Leadership - Confidence in Platoon Warrant - consists of items representing soldiers' confidence and trust in their Platoon Warrant.
5. Professional Morale - describes soldiers' confidence in their skills and abilities as soldiers.
6. Leadership - Confidence in Platoon Commander - consists of items representing soldiers' confidence and trust in their Platoon Commander.
7. Leadership - Confidence in Section Commander – is comprised of items that represent soldiers' confidence and trust in their Section Commander.
8. Leadership - Confidence in Company Commander - comprises items that represent soldiers' confidence and trust in their Company Commander (Coy Commander).

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A later version of the HRDCI-X also extended the conceptual model of Wild (1988) by measuring confidence in leaders at additional levels of command. The importance of measuring soldiers' confidence in leadership at different levels of unit-level command was advocated by Eyres (1998). In that research Eyres analyzed data from 913 respondents representing a variety of ranks within the Canadian Forces (CF). Perceptions of leadership were assessed at four levels: Senior Officer, Junior Officer, Senior Non-Commissioned Officer (NCO) and Junior NCO. Responses to this revised questionnaire indicated that all ranks were generally satisfied with leadership at the Junior NCO and Senior NCO levels. However, results also revealed that while Junior and Senior Officers were generally satisfied with the leadership at the officer level, Senior, but especially Junior NCOs were much less satisfied with the quality of leadership provided by Officers. Eyres concluded that the measurement of leadership at the different rank levels could provide commanders with additional information about aspects relevant to the climate of their units to which they would otherwise not have access.

Farley and Murphy (1996) subsequently refined the HDCRI-X and renamed it the Unit Climate Profile (UCP) Questionnaire. The UCP entailed three primary innovations. First, the original aim of unit readiness instruments was to assess important human dimensions of a unit prior to a deployment. Farley and Murphy expanded this notion and maintained that it was important to assess the human dimensions related to operational effectiveness throughout the deployment cycle. Thus, the assessment of important human dimension of a unit with the UCP questionnaire was extended to deployment and post-deployment. Second, they also assessed two additional levels of confidence in unit-level leadership: confidence in Commanding Officer (CO) and confidence in Company Sergeant Major (CSM) or Squadron Sergeant Major (SSM).

A third innovation of the UCP was its design to present a graphical representation of the mean scores of a unit on each of the overall dimensions assessed by the UCP, yielding a profile of the climate within a unit. Unit climate profile dimensions can be plotted at different deployment phases, thereby allowing for the tracking of each of the climate dimensions in the profile in a more dynamic fashion, establishing trends in the unit climate profile over time. Presenting UCP in a graphical format was thought to be more quickly accessible by military commanders (For examples of graphical representations of unit climate profiles see the annexes to this report).

Psychometric assessment was further conducted of the UCP (Dobreva-Martinova, 1999), which was administered as part of a survey battery to 614 CF personnel serving on a peace support mission in Bosnia. Exploratory factor analysis of the UCP produced 12 sub-scales tapping human dimensions that appeared to characterize the climate of an army unit. Each of these sub-scales produced good to excellent reliabilities (except that for Ideology) and together accounted for 66.38 percent of the variance in UCP scores. The 12 factors are presented below (in order of variance accounted for). For many of the UCP factors the definitions are the same as the ones presented with the earlier work on the questionnaire. Therefore, definitions are provided below only where new dimensions are introduced or where the definitions have changed substantively:

1. Morale/Cohesion
2. Positive Leadership Skills - includes items from the previously introduced Leadership Skills factor that embody perceptions of leadership skills and positive

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leadership behaviours manifested by one's immediate supervisor. For example, "My immediate supervisor offers new ideas for solving job-related problems" or "My immediate supervisor maintains high standards of performance".

3. Leadership - Confidence in Senior Non-Commissioned Officer (SrNCO) – this factor represents soldiers' confidence in their Senior NCO commanders. It combines the confidence in Platoon Warrant Officer and the confidence in Platoon Senior NCO leadership into a single dimension.
4. Military Ethos - asserts the notion that personnel enroll and serve for altruistic motives such as service to society or country (Wild, 1997). This dimension includes 4 items representing the professional morale construct and 3 items representing the ideology construct, as conceptualized by Reeves and Hansen (1989) and defined earlier.
5. Negative Leadership Skills - includes items from the previously introduced Leadership Skills factor that embody perceptions of negative leadership behaviours manifested by one's immediate supervisor. For example, "My immediate supervisor makes us work a lot of extra hours" or "My immediate supervisor lets other supervisors interfere with my work group".
6. Leadership - Confidence in Platoon/Troop Commander
7. Leadership - Confidence in Company Sergeant Major (CSM)/Squadron Sergeant Major (SSM) - consists of items that represent soldiers' confidence and trust in their CSM or their SSM.
8. Leadership - Confidence in Commanding Officer - embodies items that represent soldiers' confidence and trust in their commanding officer.
9. Leadership - Confidence in Company Commander
10. Leadership - Confidence in Section Commander
11. Ideology,
    and
12. Professional Morale.

Recent Applications of the UCP: Morale, Cohesion and Confidence in Leadership

Murphy and Farley (2000) explored the interrelationships of morale, cohesion and confidence in leadership using UCP survey data from three CF contingents that were deployed on peace support operations in the mid- to late 1990s. Their analyses were based on theoretical reformulation of the unit climate profile into three new sub-scales:

1. Morale (comprising items that tap individual and platoon-level morale),
2. Cohesion (derived from items tapping mutual support and social interaction at the platoon level), and
3. Confidence in Leadership (containing items that relate to the Platoon Commander, the Platoon's SrNCO, and the Company Commander).

Murphy and Farley (2000) presented some interesting overall trends in their initial exploratory analyses of UCP data:

1. There emerged a link between soldier morale and confidence in leadership. Specifically, morale closely co-varied with confidence in leadership across the deployment cycle for all the three contingents that they studied.

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2. Confidence in leadership scores declined significantly from pre-deployment to phase 1 of the deployment in the two contingents for which pre-deployment data were available. Confidence then consistently increased from phase 1 (early deployment) to phase 2 (mid-deployment) in all three contingents.
3. A remarkably similar pattern of decline in perceptions of unit cohesion throughout the deployment cycle appeared for each of the three contingents. Importantly, this troubling decline in cohesion appeared to continue after the troops returned to Canada (it should be noted that post-deployment data was collected for only one contingent). The authors hypothesized that the post-deployment declines for each factor might indicate a general malaise or burnout syndrome among the veterans of peace support operations - at least in the contingent that they studied.

Murphy and Farley (2000) conducted further exploratory analyses of sub-units within the same contingent to better understand the differences that they found in the levels of morale and cohesion. They found that:

1. Two sub-units having the highest morale scores largely consisted of regular service personnel, whereas the sub-units with relatively low morale scores were comprised of more augmentees - personnel from different military units who are attached to or augment a formed unit. Murphy and Farley interpreted these findings as evidence that augmentee sub-units had less time to develop morale and cohesion.
2. Interestingly, the sub-units studied by Murphy and Farley displayed widely different scores on confidence in leadership factor. Indeed, it was the augmentee sub-unit that displayed the highest level of confidence in leadership.

Murphy and Farley (2000) concluded that the lack of a consistent link between morale and confidence in leadership, the disconcerting malaise that seemed to set in during the post-deployment phase, and the need to distinguish between morale and cohesion could all have an impact on training, policy and support activities. They indicated that the surprising and at times disturbing finding concerning post-deployment declines in confidence warranted further study.

Thus, the present paper is an effort to follow-up on the trends first reported by Murphy & Farley (2000). More specifically, the results presented here address three issues by:

1. Determining the general degree of variability or consistency of unit climate profiles across ranks and across different deployments in peace support operations including different theatres of operations;
2. Replicating the preliminary analyses of Murphy and Farley (2000) by tracking the confidence in leadership dimensions as well as the other climate dimensions measured with the UCP in additional samples of deployed CF personnel, and for Officers versus NCOs;
   and
3. Exploring the potential collateral effects of the drop in confidence in leadership discovered by Murphy & Farley (2000) by more closely examining the unique contributions of positive and negative leadership on unit morale/cohesion in the theatre of operations and after the return of the troops to Canada.

It should be noted at the outset that while efforts were made in the present work to parallel the analyses conducted by Murphy and Farley (2000), direct comparisons to

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Murphy and Farley (2000) were not possible because of the differences in the UCP sub-scales used for the analyses. In specific terms, Murphy and Farley used three theoretically reformulated dimensions of the unit climate. Since the authors provided no information concerning the UCP items that comprised these dimensions, it was not possible to replicate their analyses using the re-formulated dimensions. Instead, the exploratory analyses reported in this paper are based on items comprising the UCP dimensions established in the psychometric evaluation of the instrument (see Dobreva-Martionva, 1999) and used in the Human Dimensions of Operations (HDO) project. A collateral advantage of using these psychometrically derived dimensions will be to allow comparability of results to any other UCP surveys conducted within the HDO project and to the longitudinal data that are currently collected at DHRRE.

Survey Samples and Administration

The exploratory analyses presented in this report are based on surveys of five rotations of CF personnel deployed on operational missions in the Balkans in the 1990s. Since the UCP is an instrument whose purpose is to assist commanding officers in monitoring important human dimensions during a deployment and is not an instrument for evaluating the performance of a unit or its commanders, no unit identifiers are presented in this report. Instead, letters are used to label the rotations for which unit climate profiles are calculated and presented. In this way, the identification of a rotation and its commanders is prevented.

The total number of deployed personnel surveyed with the UCP was 1543. It comprises of five samples with the following sizes: (1) N=202; (2) N=464; (3) N=540; (4) N=157; and (5) N=180. A random stratified procedure was not possible for all the surveyed samples given the changing situation of the mission and the short questionnaire administration period. Therefore, the samples were derived based on the availability of personnel.

The UCP questionnaire was used as part of a survey battery developed within the HDO project to explore important human factors that affect individual and organizational well-being and effectiveness in operational environments. Ideally, the HDO project collects information at five stages of the deployment cycle: pre-deployment, three stages in the theatre of operations: early (phase 1), mid (phase 2) and late (phase 3) deployment, and post-deployment - after the return of the troops to Canada. Pre-deployment measures were conducted approximately 24 hours before CF personnel departed for a peace support operation. Data collection for the deployment questionnaires occurred approximately 2 months apart during a peace support mission. Phase 1 deployment data collection occurred early in the deployment (first two months), mid-deployment data (phase 2) was collected midway through the peacekeeping tour, and phase 3 deployment data was collected in the final two months of the tour. Post-deployment measures were taken between six and seven months after the contingent's return to Canada. Since the HDO is a relatively new project and the mechanisms for survey administration are currently in a process of structuring and standardization, data collection has been conducted for one or several but not all the stages of the deployment in the reported five rotations.

The UCP Questionnaires

Data presented here are based on two formats of the UCP questionnaire. The initial UCP surveys were conducted with a 56-item questionnaire. Although identical in most respects, two additional levels of confidence subsequently were added to the 56-item UCP to form the 62-item questionnaire: confidence in the Commanding Officer (CO) - 3 items, and confidence in the Company Sergeant Major (CSM)/Squadron Sergeant Major (SSM) - 3 items. Therefore, the UCP profiles for Deployment "A", presented in Annex A to this report, are based on either the 56-item or the 62-item UCP and contain respectively 4 or 6 levels of confidence in leadership. The UCP profiles for Deployment "B", presented in Annex B, are based on the 56-item UCP and contain 4 levels of confidence in leadership. The UCP profiles for Deployments "C", "D" and "E", presented in Annex C, D and E respectively, are based on the 62-item UCP questionnaire and contain 6 levels of confidence in leadership. At present, the 62-item questionnaire is used in all surveys of deployed CF personnel.

Methodology

Overview

Two general types of analyses were used to explore the UCP data presented here. First, means and standard deviations were calculated for the climate domains surveyed with the UCP for each deployment and are presented in tables in Annexes A through E of this report. It should be noted that the means for the unit climate domains are average scores. That is, the means were adjusted to account for the number of items representing the domain, i.e., the total score for each domain was divided by the number of items within the domain. Thus, total scores for each UCP dimension range between 1 and 5, thereby fitting into the Likert scale used in the surveys: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree.

Moreover, the UCP graphs present adjusted means in which mean scores were standardized to fall within a range of scores from -2 (most negative) to +2 (most positive) and 0 being a neutral score. The profiles for each of the five deployed units surveyed with the UCP at different stages of the deployment cycle are presented in figures in Annexes A through E of this report.

In addition, UCP dimensions for two contingents of Canadian peacekeepers were explored over the course of their deployments in the late 1990s to more closely approximate Murphy and Farley's (2000) exploratory analysis of morale, cohesion and confidence in leadership. (As mentioned above, an exact replication of Murphy and Farley's analysis was not possible because it was not known which items comprised the three sub-scales used by the authors in their analyses). For these two contingents, the interrelationship of morale, cohesion and confidence in leadership was explored separately across the stages of the deployment cycle.

In this report morale and cohesion were explored as a single dimension for several reasons: (1) they had been initially conceptualized within the same theoretical domain; (2) items for these two domains loaded together on a single dimension in the factor analysis conducted as part of the psychometric evaluation of the UCP questionnaire; and (3) the alpha coefficient for the morale/cohesion domain obtained in the reliability analysis of the UCP questionnaire (see Dobreva-Martinova, 1999) was very high (Alpha = .93).

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Following the conceptual distinction presented by Eyres (1998), confidence in leadership was explored as two categories: (1) confidence in officers and (2) confidence in NCOs. In the present research, these categories were obtained by summing the results of the appropriate confidence in command UCP sub-scales. Specifically, confidence in officers is represented by confidence in Platoon Commander, confidence in Company Commander and confidence in Commanding Officer. Confidence in NCOs represents the following domains: confidence in Section Commander, confidence in SrNCO, confidence in Platoon Warrant Officer, and confidence in CSM/SSM.

Regression Analyses

As noted earlier, one question prompted by Murphy and Farley's (2000) work concerns the consequences of the post-deployment drop in confidence in leadership. In order to explore this issue, multiple regression analysis was conducted to more directly investigate the potential effects of positive and negative leadership on unit morale/cohesion in the theatre of operations and after the return of the troops to Canada. Multiple regression was used in this instance as it allows the exploration of the predictors of leadership and the interpretation of the unique variance accounted for by a particular predictor (Atwater & Yammarino, 1993).

In these specific analyses, positive and negative leadership practices were used as predictor variables, and unit morale/cohesion was the dependent variable for both phases of the deployment cycle. Two rotations, Deployments "A" and "E", were selected for conducting regression analyses because they represent different military missions and will best confirm the generalizability of findings if the results of the regression analyses are similar across missions.

Results

The Consistency of Unit Climate Profiles across Deployments

Descriptive analyses and graphical representations of the unit climate profiles, presented in the annexes of this report, were generated for each deployment to determine the consistency of unit climate profiles at different phases of deployments across multiple deployments and at different rank levels. It should be noted that the phases at which data were collected differed by deployment. Similarly, rank categories and the demographics of the samples also changed across deployments and therefore rank groups represented on the UCP differed across deployments as well.

Overall, results presented in the annexes indicated that unit climate profiles were fairly consistent across deployments. Specifically, mean scores were very similar for the morale/cohesion, positive leadership, negative leadership, military ethos and professional morale dimensions. Exploration of the confidence scores at the different levels of command revealed greater variability in the mean scores for these domains. Moreover, the climate profiles for the different rank categories (e.g., enlisted vs. officers) followed similar patterns, particularly the domains of morale/cohesion, positive leadership, negative leadership, military ethos and professional morale. The ideology domain produced the lowest mean score in all the profiles and was characterized by considerable variability in the scores for the rank categories in deployments "C", "D" and "E".

A closer exploration of confidence in leadership scores across deployments indicated that, when all ranks were combined, respondents had the greatest confidence in their Section Commander. The annexes also revealed another interesting finding in that soldiers' confidence in leadership up the chain of command often reflected a curvilinear rather than an inverse linear relationship pattern, in which intermediate but not higher levels of command were associated with decreases in confidence in leadership. That is, for these respondents, confidence in leadership was highest at the level of Section Commander, dropping to its lowest levels at the intermediate level of command assessed by the UCP (Platoon Commander) before recovering with higher levels of command (Company Commander and/or the Commanding Officer).

As seen in Annex F, these findings were fairly consistent across missions, particularly the domains of positive leadership, negative leadership and military ethos. The climate profiles for the two missions presented in Annex F seemed to differ considerably on the dimensions of morale/cohesion and ideology. With regard to the climate domains representing soldiers' confidence in different levels of leadership, the curvilinear pattern discussed above could also be found in the profiles from both missions. The greatest differences between the two missions were in the confidence in the Platoon Commander, the confidence in the Company Sergeant Major and the confidence in the Section Commander.

Morale/Cohesion and Confidence in Leadership: A Replication of Murphy and Farley (2000)

Analyses were also conducted to determine the generalizability of the apparent post-deployment declines in soldiers' confidence in leadership revealed by Murphy and Farley (2000). In accordance with their approach, unit climate dimensions were explored within a contingent at different phases of a deployment. In this case Deployment "A" was used as it provides the most complete collection of UCP survey data presently available within the HDO project. Data for this deployment were available for all the three in-theatre phases (early, mid and late deployment) as well as the post-deployment phase. Thus, the only stage of Deployment "A" at which no survey data was obtained was the pre-deployment stage.

Figure 1 presents the unit climate profiles by deployment phase for Deployment "A". As was the case with Murphy and Farley, standard mean scores are used to represent the unit climate dimensions, ranging from -2 (very negative) through 0 (neutral) to +2 (very positive). As seen in Figure 1, the results of Murphy and Farley are

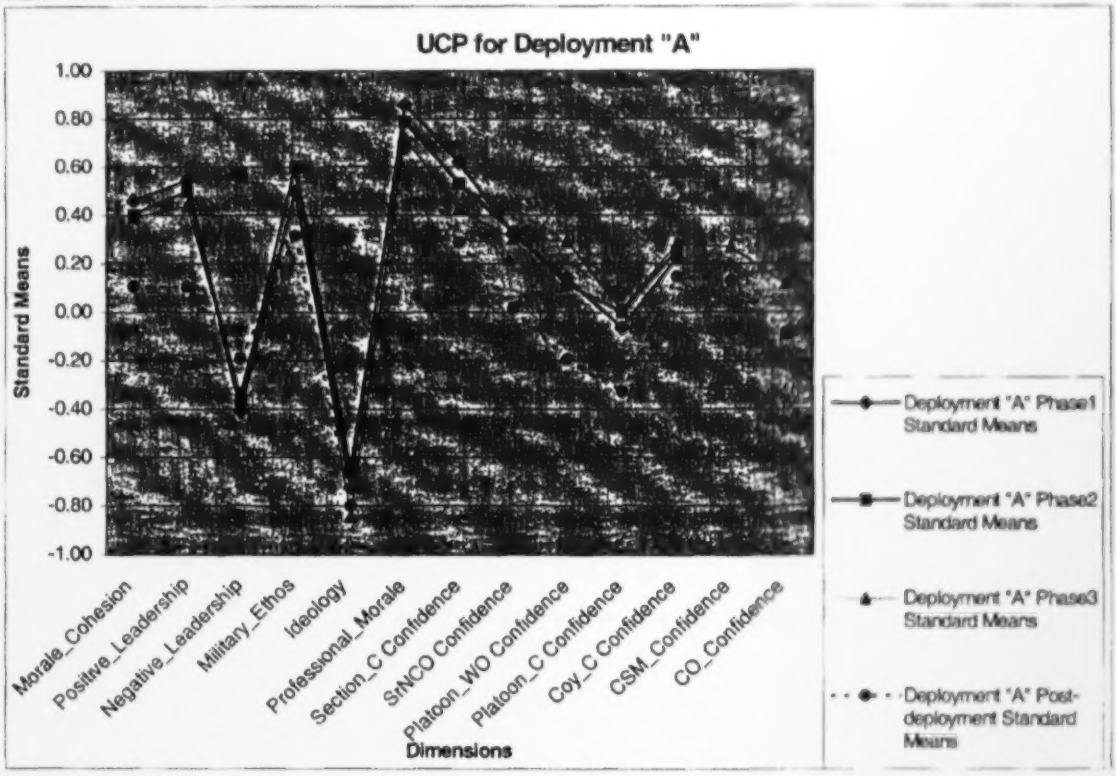

Figure 1. Unit Climate Profile for Deployment "A"

replicated here. Specifically, confidence in leadership remained quite stable while members of this contingent were in the theatre of operations but decreased after the troops returned to Canada. Morale/cohesion, perceptions of positive leadership, military ethos and professional morale dimensions also decreased in the post-deployment period, while perceptions of negative leadership increased in this phase.

Profiles were also generated for Deployment "A" to more specifically replicate Murphy & Farley's results concerning morale/cohesion, confidence in NCOs and confidence in officers. Figure 2 presents the standard means of these plotted climate dimensions for Deployment "A" ranging from -2 (very negative) through 0 (neutral) to +2 (very positive). As Figure 2 demonstrates, all dimensions showed somewhat to fairly positive scores in the theatre of operations, and showed a decline during the post-morale/cohesion and confidence in NCOs remained generally positive throughout the deployment, although decreased somewhat in the post-deployment phase. Confidence in officers was only slightly above neutral during the deployment and decreased to slightly below neutral levels in the post-deployment phase.

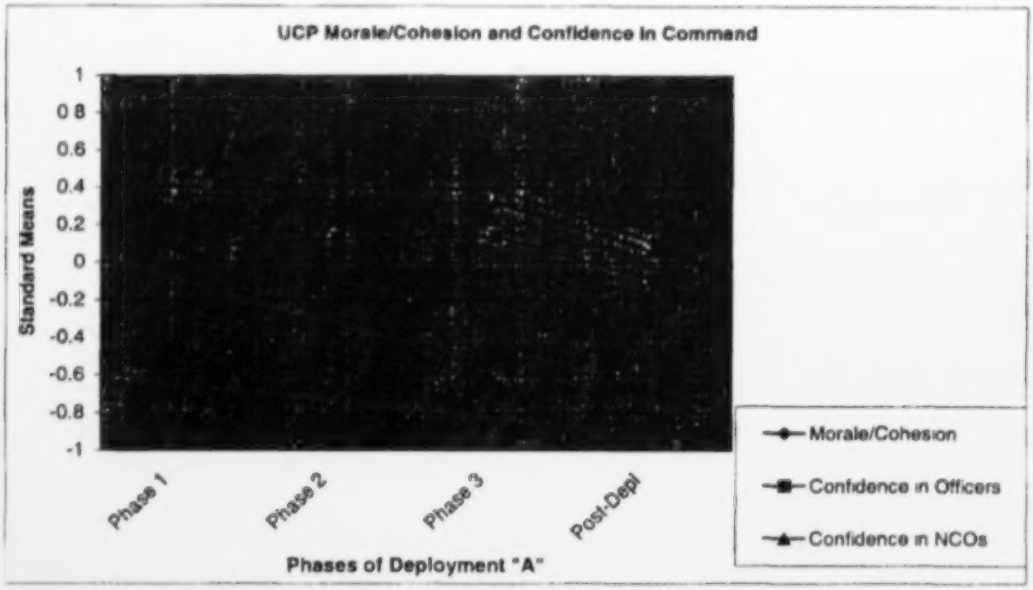

Figure 2. Morale/Cohesion and Confidence in Command for Deployment "A"

Figure 2 depicts some additional interesting trends. During the deployment, individual morale/cohesion scores appeared to follow the same pattern as that of confidence in NCOs. That is, morale/cohesion and confidence in NCOs decreased from phase 1 to phase 2 and showed a further slight decrease from phase 2 to phase 3. Confidence in officers seemed to follow an independent trend in the theatre of operations,

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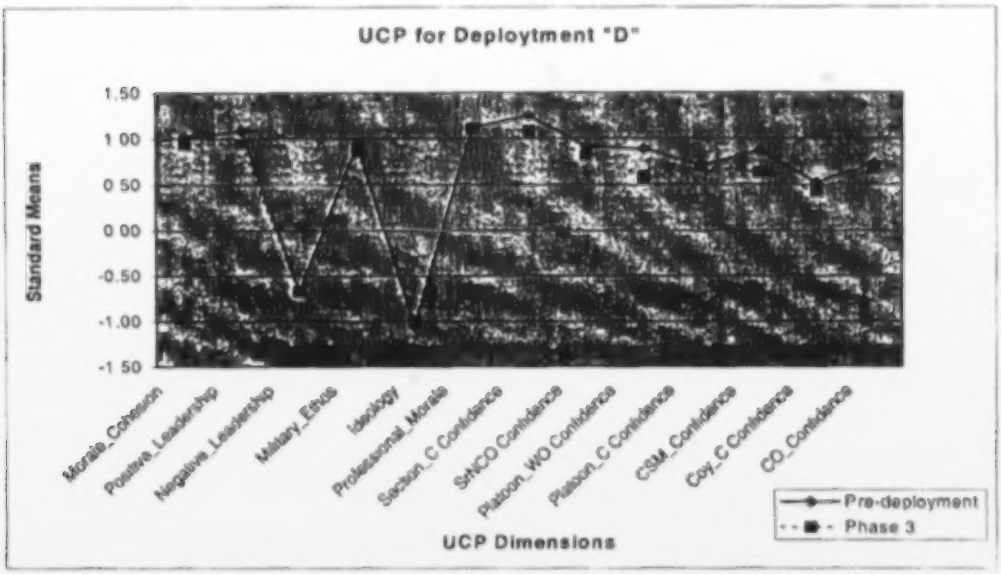
increasing from phase 1 to phase 2 and showing a further slight increase from phase 2 to phase 3 of the deployment cycle. Finally, all three scales showed a considerable decrease from phase 3 to the post-deployment phase.

Figure 3 presents the UCP for the Canadian continent deployed overseas during Deployment "D". UCP data for this contingent were available for only 2 stages of the deployment cycle: pre-deployment and phase 3 in-theatre that was sampled late in the deployment.

Figure 3. Unit Climate Profile for Deployment "D"

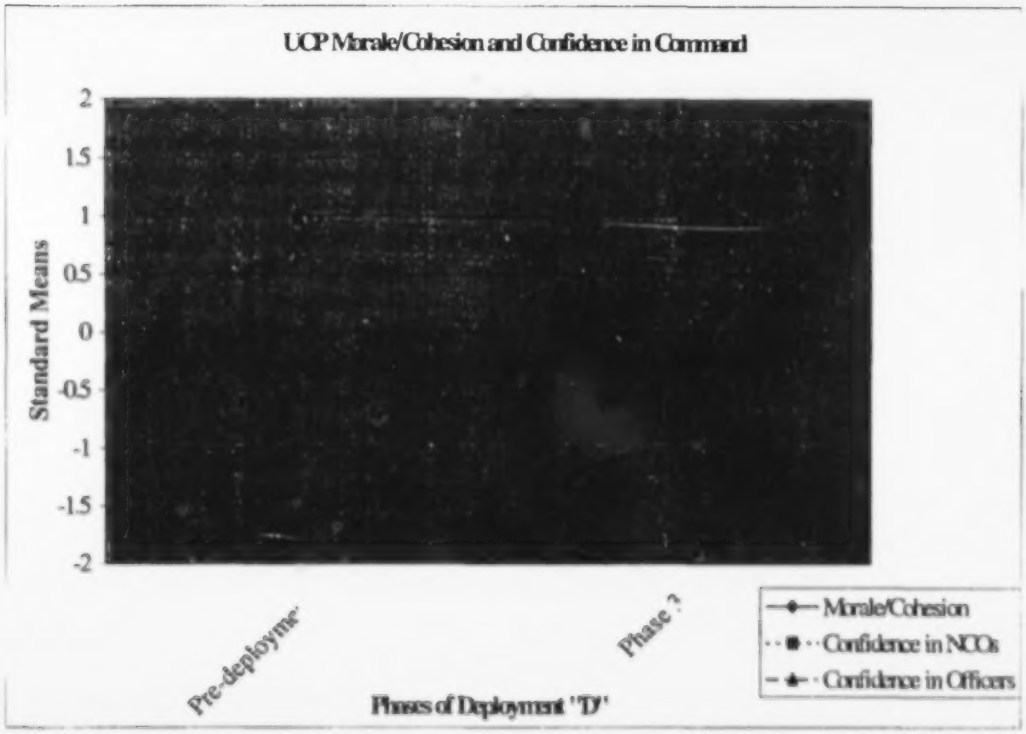
As in Figures 1 and 2, Figure 3 presents standard mean scores for the climate



dimensions, ranging from -2 (very negative) through 0 (neutral) to +2 (very positive). For this contingent, the scores on all climate domains, except negative leadership and ideology, remained on the positive side. The score on negative leadership was not reverse-coded; therefore negative score on this domain indicated lower perceptions of negative leadership behaviors. All pre-deployment and late deployment confidence indices remained considerably above the neutral score of 0, despite the slight decrease in some confidence domains from pre-deployment to phase 3 in-theatre assessments. The curvilinear relation between level of command and confidence in leadership was apparent for both the pre-deployment and phase 3 of the deployment. As noted earlier, this curvilinear pattern in the confidence in leadership domains was also observed in the other deployed CF contingents. Moreover, mean scores for the various confidence in leadership dimensions for the pre-deployment and phase 3 of Deployment "D" differed more than the mean scores for the other climate dimensions.

Figure 4 shows the mean standard scores (-2 (very negative) through 0 (neutral) to +2 (very positive)) for the conceptual replication of Murphy and Farley's results concerning morale/cohesion, confidence in officer leadership and confidence in NCO

leadership for Deployment "D". As noted earlier, the data from this deployment were not as complete as was the case for Deployment "A", depicted in Figure 1, since scores were available for only two phases of Deployment "D". Nevertheless, the figure still offers



insight on the relationship of morale/cohesion, confidence in NCO leadership and confidence in officer leadership.

Figure 4. Morale/Cohesion and Confidence in Command for Deployment "D"

Overall, all three UCP dimensions in Figure 4 show positive scores for both pre-deployment and phase 3 in theatre. As was the case in Deployment "A", morale/cohesion and confidence in NCO leadership seemed to co-vary closely in Deployment "D". However, both morale/cohesion and confidence in NCOs decreased from pre-deployment to phase 3 in deployment, with confidence in NCOs decreasing more than morale/cohesion. Confidence in officer leadership again revealed a more independent pattern, producing lower mean scores than the other two dimensions. Although confidence in officers had a lower mean score than either morale/cohesion or confidence in NCOs in the pre-deployment phase, mean levels of this dimension evidenced less of a decline at phase 3.

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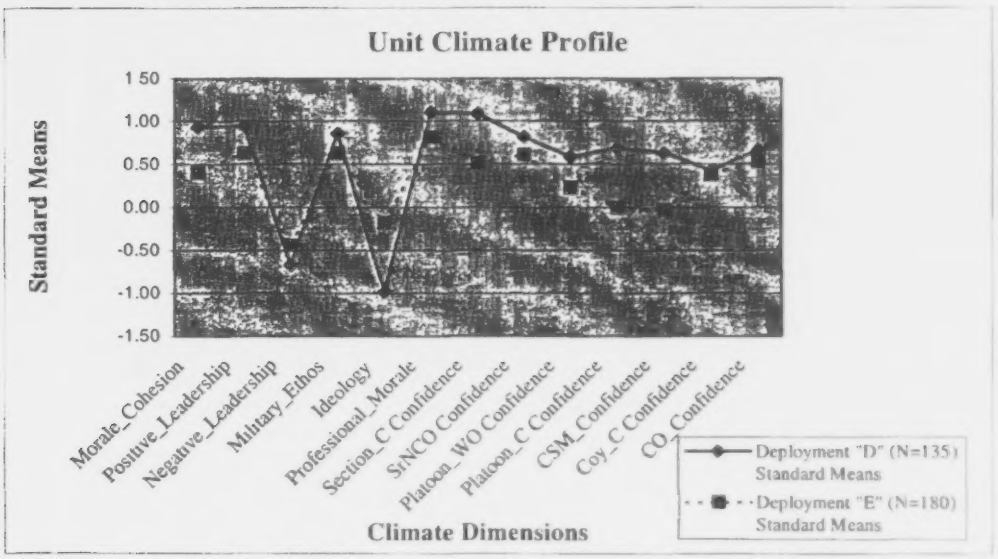
Figure 5 below presents a snapshot of the unit climate profiles for two Canadian contingents deployed on different military missions that occurred close in time in order to determine the influence of mission theatre on unit climate profiles. It is important to emphasize that inter-unit comparisons, like the one presented in Figure 5, are made solely for research purposes, not for evaluations of one unit relative to another. Indeed, any observed UCP differences could be due to a variety of factors, not assessed in the UCP, that may affect the overall levels of the UCP dimensions (i.e., third variables). Comparisons such as those conducted here only attempt to understand the very general differences in the dynamics of the unit climate with the understanding that unmeasured mission-specific situational factors might impact on the unit climate and its dimensions.

Figure 5. Unit Climate Profile for Deployments "D" and "E"

Although the mean values for the climate dimensions differed somewhat, as seen in Figure 5, the overall UCP profiles generated for these two contingents followed a similar pattern. It is also worth noting that the curvilinear pattern in the confidence in leadership domains appeared again in the climates of the two contingents deployed to different mission theatres.

A closer look at the confidence in leadership domains, depicted in Figure 5, shows that mean levels of confidence in Section Commander, Platoon Commander and Company Sergeant Major differed considerably for the two deployments. Mean scores on confidence



in Company Commander and in Commanding Officer were quite similar for both missions.

Figure 6 below presents a snapshot of the domains of morale/cohesion, confidence in NCO leadership and confidence in officer leadership for deployments "D" and "E" in the theatre of operations. As has been the case in previous analyses, confidence in officer leadership showed a lower mean score than either confidence in NCO leadership or the morale/cohesion for Deployment "D". Conversely, Deployment "E" showed very similar

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mean scores for confidence in officers and confidence in NCOs. As well, the mean scores for the two aggregated confidence dimensions were slightly lower than the mean score on the morale/cohesion dimension.

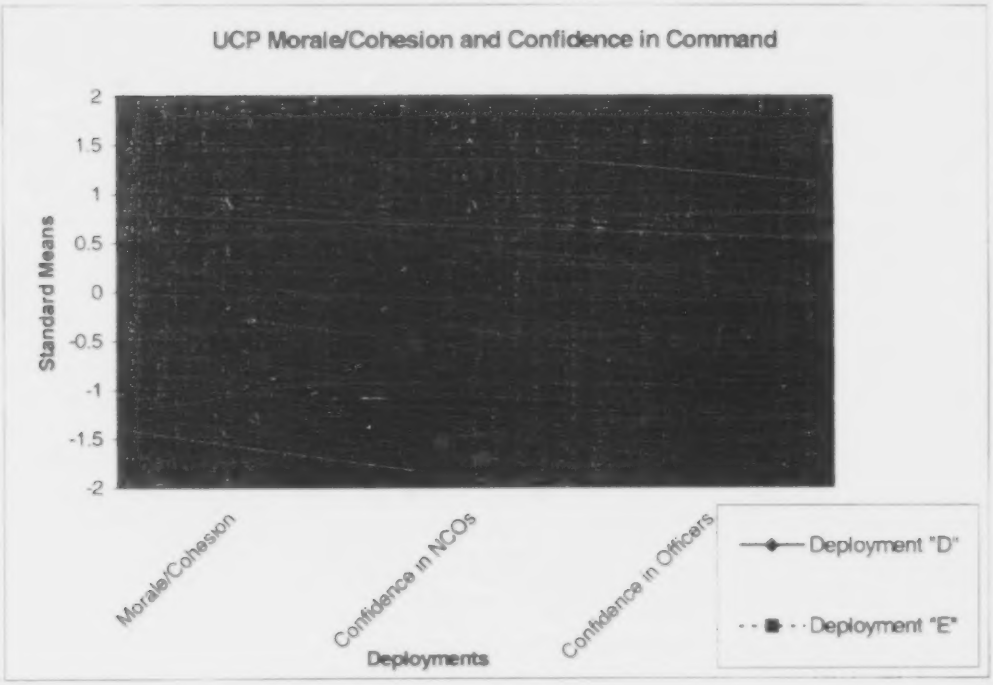

Figure 6. Morale/Cohesion, Confidence in NCOs and Confidence in Officers

Perceptions of Positive and Negative Leadership As Predictors of Soldiers' Morale and Cohesion At Different Phases of a Deployment

One of the most troubling aspects of Murphy and Farley's work concerns the apparent post-deployment drop in confidence in leadership. In order to begin to understand the consequences of this drop, the unique effects of positive and negative leadership practices on unit morale/cohesion in the theatre of operations and after the return of the troops to Canada were explored. More specifically, multiple regression analyses were performed with positive and negative leadership practices used as predictor variables, and perceptions of unit-level morale/cohesion as an outcome variable. Two separate samples of deployed CF personnel (Deployments "A" and "E") were explored in order to determine the generalizability of results.

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Results of these analyses suggested that during the late deployment phase (phase 3 in-theatre) of Deployment "A", positive leadership was a stronger predictor of unit morale/cohesion ($\beta = .46$, $p < .001$) than was negative leadership ($\beta = -.25$, $p < .001$). During Post-deployment, positive leadership was an even stronger predictor of unit morale/cohesion ($\beta = .59$, $p < .001$) than during the deployment. Negative leadership was not a significant predictor of unit morale/cohesion after the return of the troops to Canada ($\beta = .10$, ns).

Results were quite similar for Deployment "E", which represents a different mission area than Deployment "A". That is, positive leadership was also a stronger predictor of unit morale/cohesion ($\beta = .47$, $p < .001$) than was negative leadership ($\beta = -.32$, $p < .001$) in the theatre of operations. Post-deployment data were not available for Deployment "E".

Discussion

As was stated earlier, this paper explored three major questions raised in previous research using the Unit Climate Profile. First, do unit climate profiles tend to be consistent across deployments and mission theatres? Second, what is the relationship of leadership, morale/cohesion and confidence in leadership and are these relationships consistent across deployments and rank levels? Is there continuing evidence of post-deployment declines in confidence in leaders first identified by Murphy and Farley? Third, what are the unique effects of positive and negative leadership practices on unit-level morale/cohesion?

Consistency of Unit Climate Profiles

Inspection of the descriptive statistics and the graphical representations of unit climate profiles suggested that a great deal of consistency exist across the five different deployed CF contingents.

Results presented here also suggested that the ideology domain produced the lowest mean scores in all unit climate profiles. Previous research (Dobreva-Martinova, 1999) has documented that the ideology domain, in its present form, represents an occupational view of the military. The occupational view assumes that membership in the military is no different than participation in any other occupation and is not a special calling or vocation. The occupational view is embodied in agreement with items like: "What a member does in off duty hours is none of the military's business", or "Differences in rank should not be important after hours".

In his discussion of the army culture, Wild (1997) made the following differentiation between vocational and occupational workers:

> Occupational workers typically work set hours, receive extra pay for working extra hours, and are 'let go' when they can no longer perform the functions for which they were employed. In contrast, vocational workers typically are 'on duty' 24 hours a day, seven days a week, do not receive over-time, and are members of the vocation for life (p.2)

Moreover, prior psychometric analysis of the UCP questionnaire (Dobreva-Martinova, 1999), suggested that the ideology domain of the unit climate needs further development. The present results tend to confirm this.

Post-deployment Declines in Morale, Cohesion and Confidence in Leadership

Some of the descriptive analyses presented in this paper attempted to replicate earlier analyses conducted by Murphy and Farley (2000). As was noted in the introduction, exact replications of these earlier analyses were not possible as Murphy and Farley used theoretically derived UCP domains and did not provide detailed enough descriptions of the items that comprised the scales used in their work. The present research used the psychometrically derived UCP dimensions of morale/cohesion and confidence in leadership. Nonetheless, some of the general trends in the unit climate dynamics over the deployment cycle depicted by Murphy and Farley again emerged in the present analyses.

Specifically, Murphy and Farley (2000) noted a decline in morale and cohesion in the course of the deployment cycle for the three contingents that they studied, particularly in the post-deployment phase. A similar pattern of decline in morale/cohesion and confidence in leadership after the return of the troops to Canada was observed in the present study. Murphy and Farley suggested that these declines in morale, cohesion and confidence in leadership in the post-deployment phase might be due to more macro-level post-deployment adjustment factors that warrant further study. Given this replication of their initial findings, it seems clear that future research efforts should be directed to the exploration of specific factors that contribute to declines in morale and cohesion in the post-deployment phase.

With regard to the decline in confidence in leadership in the post-deployment phase, further psychometric research should be directed to explore whether this decline reflects a scale artifact, i.e. inability of the UCP confidence items to capture confidence in leadership at that particular phase of the deployment cycle. In order to conduct such psychometric analysis and validate the UCP confidence sub-scales, post-deployment data from more rotations of CF personnel would be necessary. At present, post-deployment data are available within the HDO project from only one rotation of CF personnel that have been deployed overseas on a military mission.

Regarding morale/cohesion, it would be of benefit to explore factors that may ameliorate the declines in morale and cohesion. Results of regression analyses presented here suggest that positive leadership practices were the most important factor related to morale and cohesion levels within a unit, regardless of deployment phase. Thus, positive leadership practices might be a potential resource to deal with the decrease in morale/cohesion after the return of the troops to Canada. It may well be that intensive use of specific positive leadership practices will facilitate the post-deployment adjustment of the returning peacekeepers.

Rank Differences in Confidence in Leadership

Eyres (1998) uncovered differences in soldiers' confidence in NCOs and confidence in officers. This approach in which confidence ratings of superiors were aggregated into superordinate command categories of NCOs and officers was also adopted

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in the present analyses. Specifically, the confidence in Section Commander, confidence in SrNCO, confidence in Platoon Warrant Officer, confidence in CSM items were aggregated into a single confidence in NCOs index and confidence in Platoon Commander, confidence in Company Commander and confidence in Commanding Officer items were aggregated into a single confidence in officers index. The present results replicated Eyres earlier findings. That is, in general, soldiers' confidence ratings were higher for NCOs than for officers for virtually all deployments studied.

Such a finding perhaps is not surprising considering the fact that the surveyed samples consisted predominantly of privates and Junior NCOs for whom the NCOs are the immediate supervisors with whom they have most interactions while the commanding officers are more remote. It takes more time to get to know the commanding officers and therefore the confidence in officers' domain usually follows an upward course from pre-deployment to the late phase in the theatre of operation. These ideas would be supported if data were obtained from Senior NCOs and Junior Officers and showed a similar pattern of greater confidence in their immediate supervisors, and less confidence in supervisors of whom they have less knowledge.

However, other analyses presented here suggest that it is important to look at more than two superordinate groupings of levels of command. Contrary to the popular belief that higher levels in the chain of command are associated with decreases in assessments confidence in leadership by subordinates, the results presented in this paper showed curvilinearity in the confidence in leadership rather than the predicted inverse linear pattern. The curvilinear pattern in the confidence in leadership domains of the unit climate deserves further attention. It is certainly worth exploring whether this curvilinear pattern is particular to a deployed environment or also holds in garrison in Canada. The curvilinearity in the relationship between command positions and confidence in leadership should be subjected to further exploration, for instance via discriminant analyses of confidence in leadership or positive and negative leadership practices and rank.

The interrelationship of confidence in NCOs and confidence in officers with morale/cohesion was also explored. Analyses indicated that morale/cohesion closely co-varied with confidence in NCO leadership while confidence in officers seemed to follow a more independent course. Integrated with the notions expressed above, this finding may suggest that familiarity associated with positive leadership practices affects the morale and cohesion levels of subordinate troops. These ideas might be further explored in samples that include a broader representation of all ranks.

Unit Climate Profiles in Different Theatres of Operation

Unit climate profiles were also generated for deployments based in two separate theatres of operations. Overall, UCP patterns were similar although there were some differences in mean scores on certain variables. For example, the climate profiles for the two missions seemed to differ considerably on the dimensions of morale/cohesion and ideology and on confidence in the Platoon Commander, confidence in the Company Sergeant Major and confidence in the Section Commander. Although these results indicate some differences in perceptions, they may simply reflect very real differences in important situational factors occurring in the different mission theatres. It seems

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imperative that future UCP assessments should involve the exploration of both personal and situational factors that nurture or diminish confidence in leadership.

Findings presented here also suggest that the curvilinear pattern in confidence in leadership holds across peace support missions in different mission areas. Nonetheless, unit climate profiles of units deployed on different missions might be subjected to further research (for an example see Annex F), in order to identify situational or mission related factors that affect confidence in leadership. Finally, it is worth exploring the dynamics in the confidence levels and identifying variables that are related to the increased or decreased levels of confidence throughout the deployment cycle.

The Relative Role of Positive and Negative Leadership Practices on Morale and Cohesion

The results of the regression analyses presented in this paper suggest a floor effect for the impact of negative leadership on unit morale/cohesion as well as a lack of a ceiling effect for the impact of positive leadership on unit morale/cohesion. The fact that negative leadership practices are not a significant predictor of unit morale/cohesion in the post-deployment phase for Deployment "A" suggests that efforts to explore the decrease in morale/cohesion in this phase should be directed elsewhere. Based on the findings in the regression analyses, it seems that negative leadership can impair morale/cohesion to a certain extent. Therefore it is speculated that there might be a floor effect in this relationship. On the other side, the even stronger effect of positive leadership on unit morale/cohesion in the post-deployment stage suggests that there might be no limit to the extent in which positive leadership may influence the morale and cohesion in a unit, i.e., there might not be a ceiling effect in this relationship. Such a speculation needs to be further tested in order to understand more thoroughly the effects of leadership practices on unit morale/cohesion. As well, the impact of the confidence in different levels of command on soldiers' professional morale, unit morale/cohesion or soldiers' commitment to the organization of the CF may be tested in a similar manner.

Additional Issues

As intriguing as the present results are, many questions remain to be investigated. Confidence in leadership could be further explored in terms of other demographic characteristics, for example, gender or type of unit. As mentioned earlier, confidence at different levels of command could also be explored in non-deployed units. As well, trends in deployed and non-deployed units could be compared to gain further understanding of factors and variables related to the confidence construct.

An observation during the data screening procedures, conducted before the exploratory analyses, revealed that most of the missing data were in the confidence in leadership domains of the UCP. This observation is worth exploring in further HDO surveys. If these results are consistent across contingents and deployments it may be that thought should be given to rewording these items. It may also be that soldiers are concerned with the confidentiality of their responses or are reluctant to comment upon the leadership of their unit. Each of these issues needs to be addressed in future HDO and UCP surveys.

Another finding with considerable practical implications in Murphy and Farley's analysis was the difference in the morale/cohesion and confidence in leadership in the sub-

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units of regular personnel and augmentees. More specifically, they found that the two sub-units having the highest morale scores largely consisted of regular service personnel, whereas the sub-units with relatively low morale scores were composed of augmentees. This finding was attributed by Murphy and Farley to the shortage of time that the augmentee sub-units had to develop morale and cohesion. Interestingly, the augmentee sub-unit displayed highest level of confidence in leadership. According to Murphy and Farley, these results indicated that morale and confidence in leadership are not necessarily strongly linked. Unfortunately, the demographic section of the questionnaires used in this study did not include any sub-unit identification. Thus, it was not possible to replicate the sub-unit analysis conducted by Murphy and Farley. Nevertheless, this is an important finding to pursue as recent CF projections indicate that at least 30% of future deployments will be staffed by augmentees (Thompson & Gignac, 2000). It is recommended that future questionnaires always include this type of information to enable analyses of important demographic information that would facilitate the understanding and the explanation of overall findings.

Further to the split of the confidence in leadership into confidence in officers and confidence in NCOs, the confidence in leadership for the rank categories surveyed with the UCP is worth further exploration. The annexes to this report present the unit climate profiles, including the confidence in leadership domains, according to the rank of the surveyed personnel. A look at these profiles reveals that the mean scores for the confidence in leadership of the different ranks vary. It is well worth exploring what factors might be related to the low or high levels of confidence revealed by a certain rank category. For example, the higher level of confidence in leadership shown by officers when compared to the NCOs deserves further, more in-depth analysis. Extrapolating from Chemers et al.'s (2000) findings concerning personality traits as predictors of leadership performance, it might be speculated that manifesting higher confidence in different levels of command is related to concepts like self-confidence, self-efficacy or optimism. Such a speculation deserves further, more in-depth analysis.

As well, further exploratory analyses might be directed to variables that have been associated with leadership competence, trust and respect (e.g., variables to consider include the encouragement of good or clear communication up and down the chain of command, the ability to motivate and empower subordinates, direct familiarity with subordinates (i.e., visibility), and perceived competence of leader by subordinates). Leadership competence, trust and respect have been found to characterize effective leadership in the military (e.g., Kirckland, 1989). The relationship of these variables to confidence in leadership might be explored through regression analyses where leadership competence, trust and respect are predictors (independent variables) and confidence in leadership is the outcome (dependent) variable. Confidence in leadership could also be associated with cohesion, lack of fear, and fewer disciplinary problems (Murphy & Farley, 2000).

In addition to the exploration of factors that might inspire confidence in leadership, it is also worth exploring factors that might impede the development of confidence in leadership. Examples of such factors could be a tendency toward micro-management of subordinates and promoting a "zero-defects" atmosphere (for examples see Dobreva-Martinova, 2000).

Conclusion

Several conclusions could be drawn from this study. On the basis of the consistency in the unit climate profiles presented in this report, it may be concluded that the UCP measures core characteristics of a unit that are generalizable across ranks and deployments. The greater variability in the confidence in leadership scores across ranks and deployments, when compared for example to military ethos or professional morale, suggests that confidence in leadership may be more susceptible to external influences. As was discussed in the introduction, confidence in leadership may be susceptible to influences from the environment or to the personalities of the leaders.

The decline in morale, cohesion and confidence in leadership in the post-deployment, registered by Murphy and Farley (2000) and replicated in the present study, could be an example of how the UCP can serve as a diagnostic tool for the state of a unit. The practical implications of this conclusion could be timely interventions that reflect the needs of a unit as registered by the UCP surveys.

The highest confidence in the Section Commander displayed in the UCP surveys, which was suggested to reflect Section Commander's proximity to the troops, may also have practical implications. The Section Commander could be instrumental in implementing change and positively affecting other climate dimensions such as the morale and cohesion in the primary military group. As well, the finding that positive leadership is a significant predictor of morale/cohesion suggests that efforts on the part of the Section Commander and the other commanders to use positive leadership behaviours and practices are a great resource toward positively influencing the morale and cohesion in an army unit. The increase in the confidence in officers during a deployment (except for post-deployment) may also suggest that visibility and getting to know commanders increases soldiers confidence in them.

With regard to the UCP as a survey instrument, it may be concluded that the UCP questionnaire allows following the dynamics in the climate of an army unit across a deployment cycle. In this way, it can assist commanding officers in their decision making with regard to the readiness of their troops. Furthermore, repeated measurement of leadership at different command levels provided by the UCP provides commanders with additional information about their units and formations to which they would otherwise not have access (Eyres, 1998). The usefulness of tracking the dynamics in the confidence in leadership across a deployment cycle is supported by military research and anecdotal experience, which has shown that confidence in leadership is an important determinant of battlefield success and of efficient military performance.

Exploring the confidence in leadership throughout the deployment cycle and in relation to factors important to the mission could provide a more thorough understanding of the confidence construct and its dynamics in the course of an operation. Such an understanding can be used by military commanders for building and maintaining trust and confidence in their own leadership as well as enhancing optimal performance of their troops, particularly in the demanding and challenging situations faced by military units.

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Unit Climate Profile for Deployment "A"

Annex A presents the unit climate profiles and tables with descriptive statistics prepared on the basis of the results from the UCP surveys at the indicated phases of Deployment "A".

For this deployment, pre-deployment surveys were not conducted. The results from the surveys with the UCP questionnaire for phases 1, 2 and 3 in the theatre of operations, and the UCP survey results from the post-deployment phase are presented in the figures and tables in this annex, according to the rank of survey participants.

Figure 1 presents the UCP for phase 1 (the early stage in the theatre of operations).

Figure 1. UCP for Phase 1 of Deployment "A"

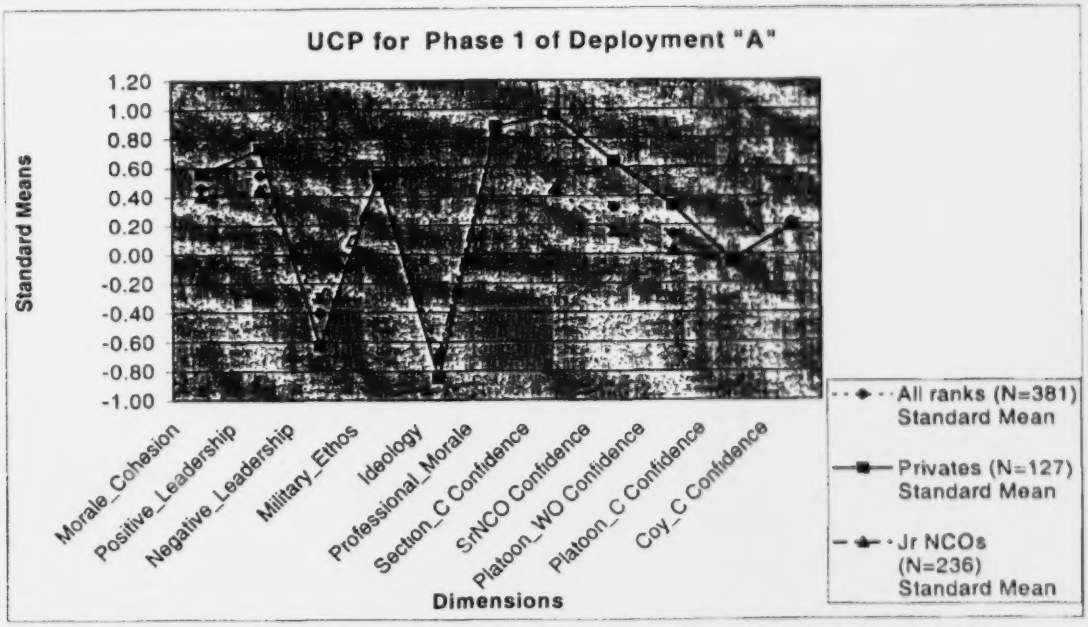

Table 1 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the four respondent rank-levels of survey participants for phase 1 of Deployment "A". Table 1 includes descriptive statistics for SrNCOs, junior and senior officers despite the fact that these ranks are represented by single individuals. However, these ranks were not presented in the UCP in Figure 1.

Table 1

Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Four Respondent Rank-Levels at Phase 1 of Deployment "A"

	Respondent Rank					
	All ranks (N= 381)	Privates (N=127)	Jr NCOs (N=236)	Sr NCOs (N=1)	Jr Officers (N=1)	Sr Officers (N=1)
Morale/Cohesion	**55.34** 9.82	**56.84** 9.9	**54.4** 9.6	**78**	**66**	**59**
Positive Leadership	**21.27** 4.86	**22.38** 4.31	**20.7** 4.9	**22**	**30**	**24**
Negative Leadership	**15.57** 4.82	**14.23** 4.37	**16.19** 4.82	**18**	**7**	**13**
Military Ethos	**24.5** 4.92	**24.78** 4.83	**24.37** 5.03	**31**	**24**	**23**
Ideology	**6.83** 3.09	**6.46** 2.78	**6.97** 3.14	**11**	**15**	**15**
Professional Morale	**7.72** 1.2	**7.76** 1.07	**7.7** 1.25	**10**	**7**	**7**
Confidence in Section Commander	**10.86** 3.12	**11.88** 2.77	**10.36** 3.15	**15**	**12**	**9**
Confidence in Senior NCO	**9.97** 2.97	**10.92** 2.54	**9.48** 3.07	**15**	**15**	**9**
Confidence in Platoon Warrant Officer	**9.42** 3.75	**10.01** 3.69	**9.07** 3.78	**15**	**15**	**13**
Confidence in Platoon Commander	**8.81** 3.3	**8.87** 3.10	**8.82** 3.42	**9**	**13**	**10**
Confidence in Company Commander	**9.67** 3.14	**9.59** 3.15	**9.67** 3.17	**10**	**12**	**9**

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 56-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, and Confidence in Company Commander: 15.

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Figure 2 presents the UCP for phase 2 (the middle stage in the theatre of operations) of Deployment "A".

Figure 2. UCP for Phase 2 of Deployment "A"

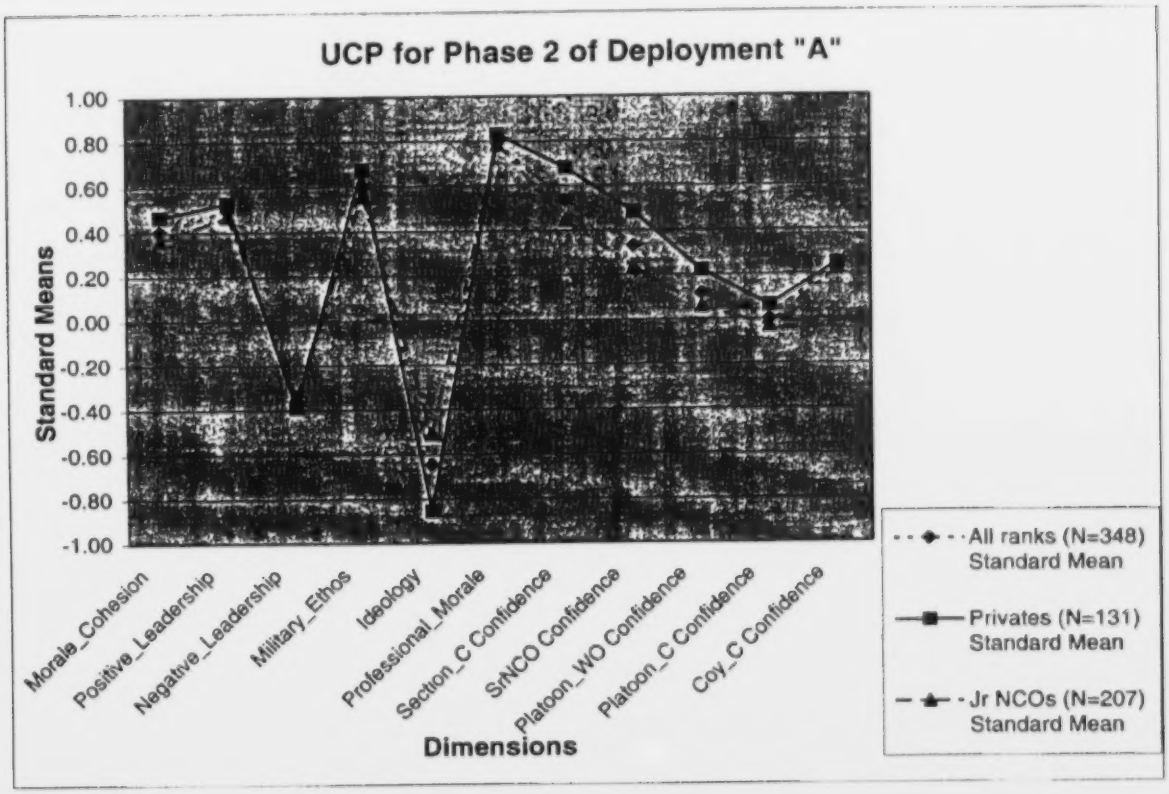

Table 2 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the two rank-levels of survey participants for phase 2 of Deployment "A":

Table 2

Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Two Respondent Rank-Levels at Phase 2 of Deployment "A"

	Respondent Rank		
	All ranks (N= 348)	Privates (N=131)	Jr NCOs (N=207)
Morale/Cohesion	**54.46** 10.59	**55.49** 11.23	**53.82** 10.22
Positive Leadership	**20.99** 4.76	**21.17** 4.91	**20.82** 4.67
Negative Leadership	**15.83** 4.52	**15.69** 4.66	**15.99** 4.42
Military Ethos	**25.21** 5.01	**25.72** 5.02	**24.88** 5.02
Ideology	**7.06** 2.99	**6.44** 2.86	**7.48** 3.04
Professional Morale	**7.58** 1.22	**7.66** 1.18	**7.57** 1.26
Confidence in Section Commander	**10.6** 3.18	**11.05** 3.28	**10.34** 3.04
Confidence in Senior NCO	**9.99** 2.97	**10.45** 3.07	**9.7** 2.87
Confidence in Platoon Warrant Officer	**9.35** 3.88	**9.66** 3.81	**9.17** 3.94
Confidence in Platoon Commander	**9.00** 3.4	**9.19** 3.22	**8.91** 3.5
Confidence in Company Commander	**9.76** 3.07	**9.75** 2.83	**9.68** 3.21

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 56-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, and Confidence in Company Commander: 15.

Figure 3 presents the UCP for phase 3 (the late stage in the theatre of operations) of Deployment "A". Figure 3 presents the confidence in the Company Sergeant Major (CSM) and the Company Commander, which are not presented in the UCP in Figures 1 and 2.

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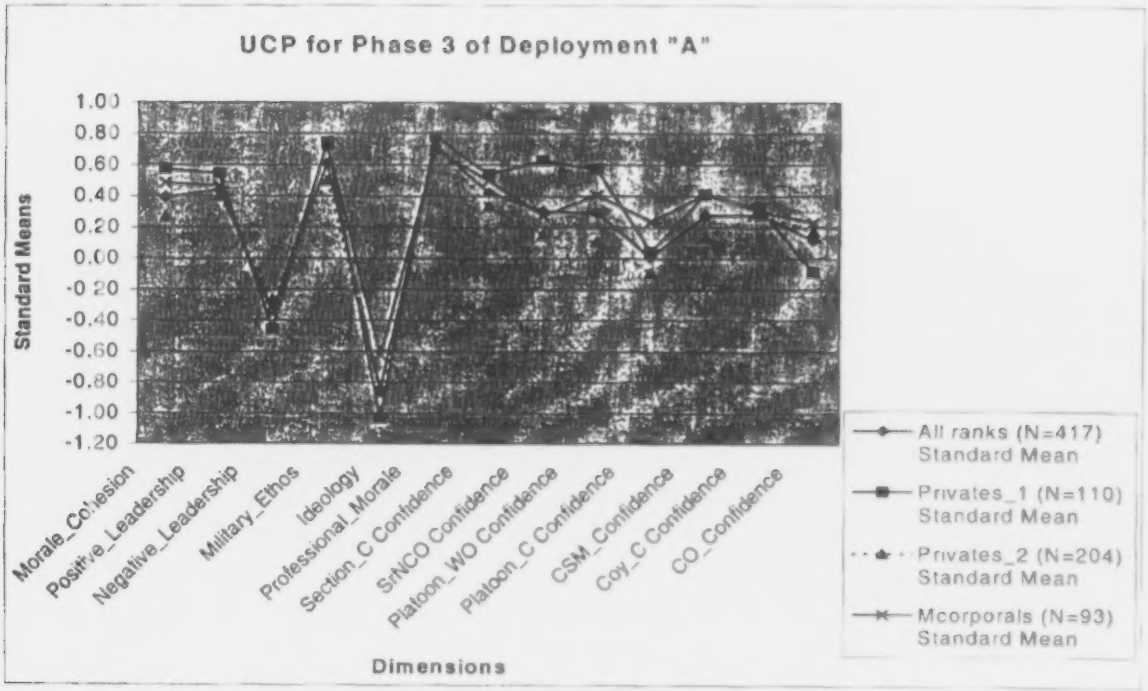

Figure 3. UCP for Phase 3 of Deployment "A"

Note: The UCP in Figure 3 reflects the data available from surveying the CF personnel on Deployment "A" at phase 3 of the deployment cycle. There seems to be a mistake in the data entry because the rank category of private is used as a label for two rank categories. Since it was impossible to tell which other rank category might have been labeled as privates, and at the same time, since it was our intention to retain the rank categories as existing in the data base, Privates_1 and Privates_2 were used as rank category labels in Figure 3.

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Table 3 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the three rank-levels of survey participants for phase 3 of Deployment "A". For comments on Privates_1 and Privates_2 rank categories, see the note under Figure 3.

Table 3

Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Three Respondent Rank-Levels at Phase 3 of Deployment "A"

	Respondent Rank			
	All ranks (N= 417)	Privates_1 (N=110)	Privates_2 (N=204)	M Corporals (N=93)
Morale/Cohesion	**54.28** 12.07	**57.17** 13.17	**52.26** 11.09	**55.72** 12.42
Positive Leadership	**20.63** 5.36	**21.26** 5.36	**20.4** 5.11	**20.8** 5.77
Negative Leadership	**16.00** 4.71	**15.26** 4.76	**16.44** 4.52	**15.87** 5.11
Military Ethos	**25.24** 5.01	**26.21** 4.81	**24.49** 4.95	**26.1** 5.00
Ideology	**6.47** 2.88	**5.91** 2.62	**6.42** 2.82	**7.14** 3.08
Professional Morale	**7.44** 1.25	**7.56** 1.11	**7.44** 1.28	**7.39** 1.38
Confidence in Section Commander	**10.27** 3.41	**10.62** 3.75	**10.01** 2.98	**10.51** 3.79
Confidence in Senior NCO	**9.91** 2.87	**10.88** 2.59	**9.44** 2.78	**9.82** 3.09
Confidence in Platoon Warrant Officer	**9.88** 3.73	**10.72** 3.51	**9.33** 3.91	**10.22** 3.4
Confidence in Platoon Commander	**9.03** 3.5	**9.13** 3.72	**8.72** 3.34	**9.71** 3.51
Confidence in CSM	**9.81** 3.42	**10.23** 3.32	**9.41** 3.44	**10.23** 3.38
Confidence in Company Commander	**9.85** 3.57	**9.97** 3.93	**9.86** 3.3	**9.91** 3.64
Confidence in Commanding Officer	**9.34** 2.7	**8.74** 2.78	**9.52** 2.51	**9.69** 2.86

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 62-item UCP. Table 3 presents two levels of confidence in command that are not presented in Tables 1 and 2. They are confidence in the Company Sergeant Major (CSM) and confidence in the Commanding Officer (CO). The means are shown in

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bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, Confidence in the CSM: 15, Confidence in Company Commander: 15, and Confidence in the Commanding Officer: 15.

Figure 4 presents the UCP for the post-deployment phase (after the troops' return to Canada) of Deployment "A". Figure 4 and Table 4 are based on the 62-item UCP questionnaire.

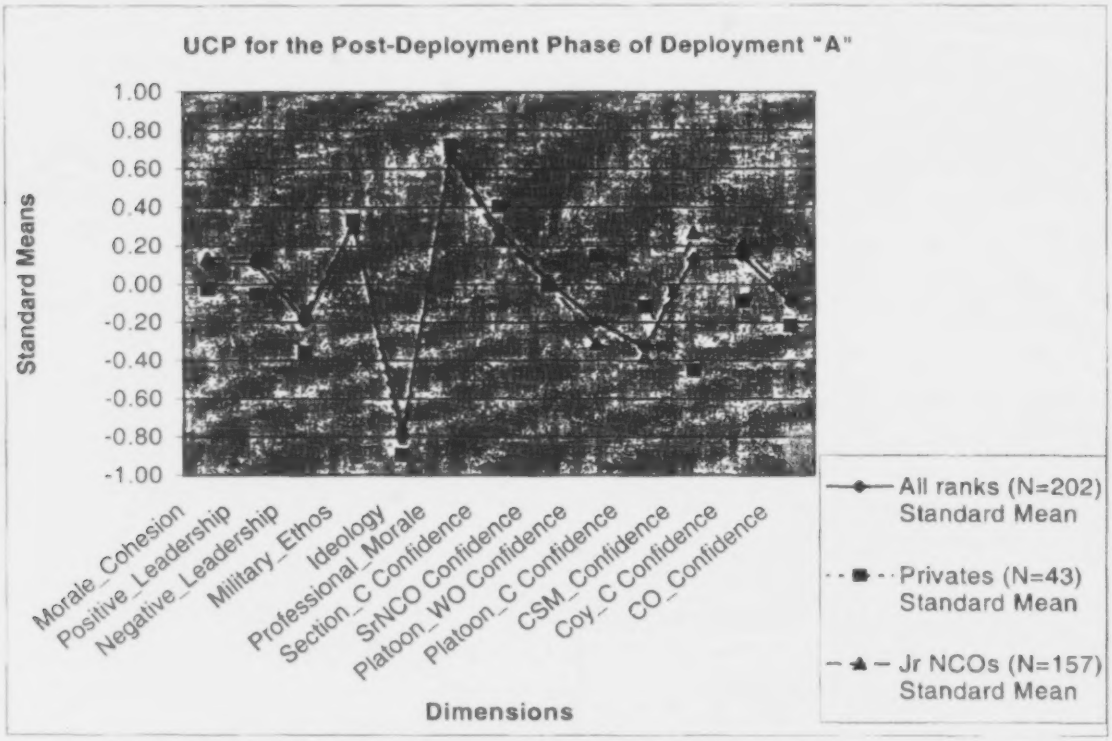

Figure 4. UCP for the Post-Deployment Phase of Deployment "A"

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Table 4 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the two rank-levels of survey participants for the post-deployment phase of Deployment "A".

Table 4
Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Two Respondent Rank-Levels at the Post-Deployment Phase of Deployment "A"

	Respondent Rank		
	All ranks (N= 202)	Privates (N=43)	Jr NCOs (N=157)
Morale/Cohesion	**49.71** 12.84	**47.58** 14.85	**50.15** 12.21
Positive Leadership	**18.63** 5.33	**17.7** 5.71	**18.85** 5.22
Negative Leadership	**16.85** 4.71	**15.88** 4.44	**17.14** 4.77
Military Ethos	**23.2** 5.38	**23.34** 5.2	**23.08** 5.43
Ideology	**6.6** 3.01	**6.33** 2.96	**6.71** 3.04
Professional Morale	**7.35** 1.4	**7.45** 1.53	**7.32** 1.38
Confidence in Section Commander	**9.86** 2.76	**10.21** 3.08	**9.73** 2.68
Confidence in Senior NCO	**9.05** 2.82	**8.98** 2.96	**9.05** 2.79
Confidence in Platoon Warrant Officer	**8.42** 3.41	**9.45** 3.35	**8.06** 3.32
Confidence in Platoon Commander	**8.02** 3.32	**8.65** 2.92	**7.85** 3.39
Confidence in CSM	**9.39** 3.63	**7.65** 3.66	**9.8** 3.46
Confidence in Company Commander	**9.44** 3.41	**8.74** 3.9	**9.61** 3.27
Confidence in Commanding Officer	**8.72** 3.1	**8.35** 3.26	**8.8** 3.07

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 62-item UCP. Table 4 presents two levels of confidence in command that are not presented in Tables 1 and 2. They are confidence in the Company Sergeant Major (CSM) and confidence in the Commanding Officer (CO). The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, Confidence in the CSM: 15, Confidence in Company Commander: 15, and Confidence in the Commanding Officer: 15.

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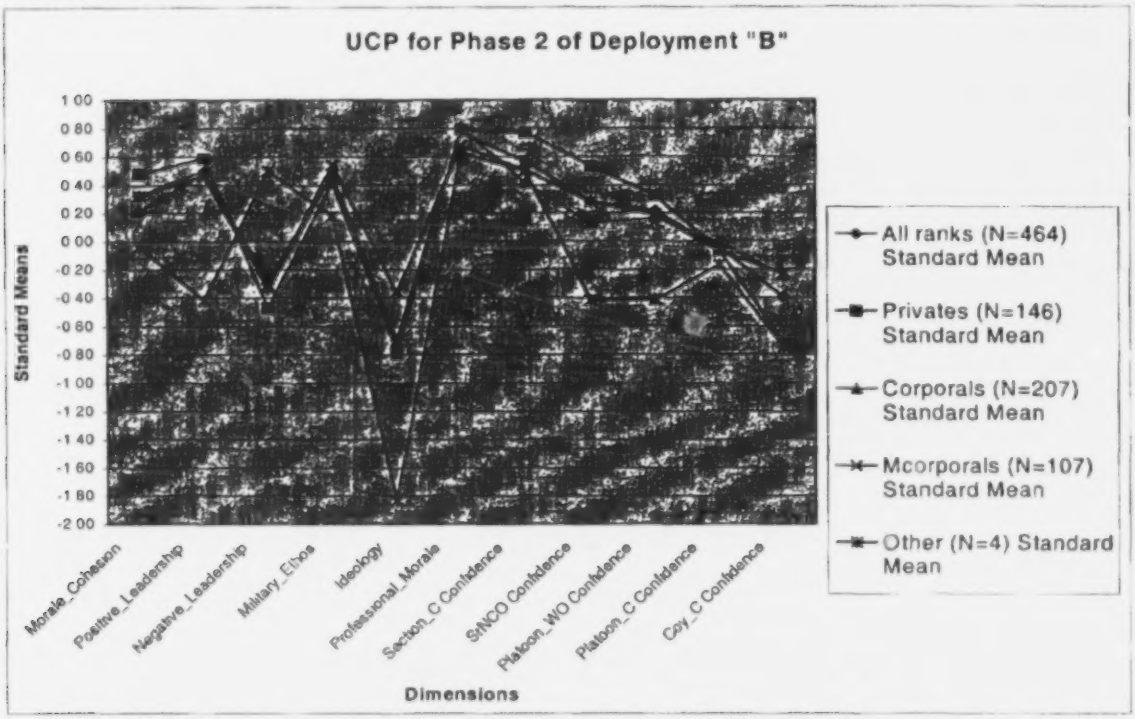
Annex B

Unit Climate Profile for Deployment "B"

This annex presents the unit climate profile and the table with descriptive statistics prepared on the basis of the results from the UCP surveys at phase 2 of Deployment "B". The results are presented according to the rank structure of the surveyed sample.

Figure 1 presents the Unit Climate Profile for phase 2 (the middle stage in the theatre of operations) for Deployment "B".

Figure 1. UCP for Phase 2 of Deployment "B"



As can be seen in Figure 1, there is an unidentified rank category consisting of only four cases. However, it was retained in the unit climate profile presented in the figure for exploratory purposes.

Table 1 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the four respondent rank-levels of survey participants for phase 2 of Deployment "B". Table 1 includes descriptive statistics for "Other" rank category despite the fact that this category is not identified and contains only four cases, based on the assumption that the information might be useful for exploratory purposes.

Table 1

Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Four Respondent Rank-Levels at Phase 2 of Deployment "B"

	Respondent Rank				
	All ranks (N= 467)	Privates (N=146)	Corporals (N=207)	MCorporals (N=107)	Other (N=4)
Morale/Cohesion	**53.21** 11.24	**55.61** 11.54	**51.45** 11.27	**53.16** 10.27	**47.33** 4.16
Positive Leadership	**20.99** 4.81	**21.53** 5.05	**20.85** 4 46	**20.75** 5.09	**15.5** 2.65
Negative Leadership	**15.96** 4.61	**15.15** 4.66	**16.36** 4.2	**16.02** 5.04	**21** 4.32
Military Ethos	**24.32** 5 28	**23.9** 5.99	**24.34** 4.75	**24.79** 5.24	**22.25** 3.2
Ideology	**6.91** 3.21	**6.7** 3.26	**6.62** 2.98	**7.92** 3.37	**3.5** .58
Professional Morale	**7.54** 1.42	**7.58** 1.4	**7.61** 1 36	**7.35** 1.54	**7.25** 2.22
Confidence in Section Commander	**10.7** 3.23	**11.31** 3.16	**10.24** 3.45	**10.52** 2.8	**10.5** 2.12
Confidence in Senior NCO	**9.85** 2.8	**10.6** 2.61	**9.38** 2.77	**9.84** 2.84	**7.75** 3.2
Confidence in Platoon Warrant Officer	**9.64** 3 65	**9.97** 3.78	**9.5** 3.5	**9.56** 3.77	**7.75** 3.2
Confidence in Platoon Commander	**8.86** 3.3	**8.8** 3.46	**8.96** 3.23	**8.78** 3.24	**8.5** 3.87
Confidence in Company Commander	**7.81** 3.42	**6.85** 3.52	**8.26** 3.26	**8.31** 3.32	**6.75** 3.3

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 56-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander. 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, and Confidence in Company Commander: 15.

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Annex C

Unit Climate Profile for Deployment "C"

This annex presents the unit climate profile and the table with descriptive statistics prepared on the basis of the results from the UCP surveys at phase 3 of Deployment "C". The results are presented according to the rank structure of the surveyed sample.

Figure 1 presents the UCP for phase 3 (the late stage in the theatre of operations) for Deployment "C".

Figure 1. UCP for Phase 3 of Deployment "C"

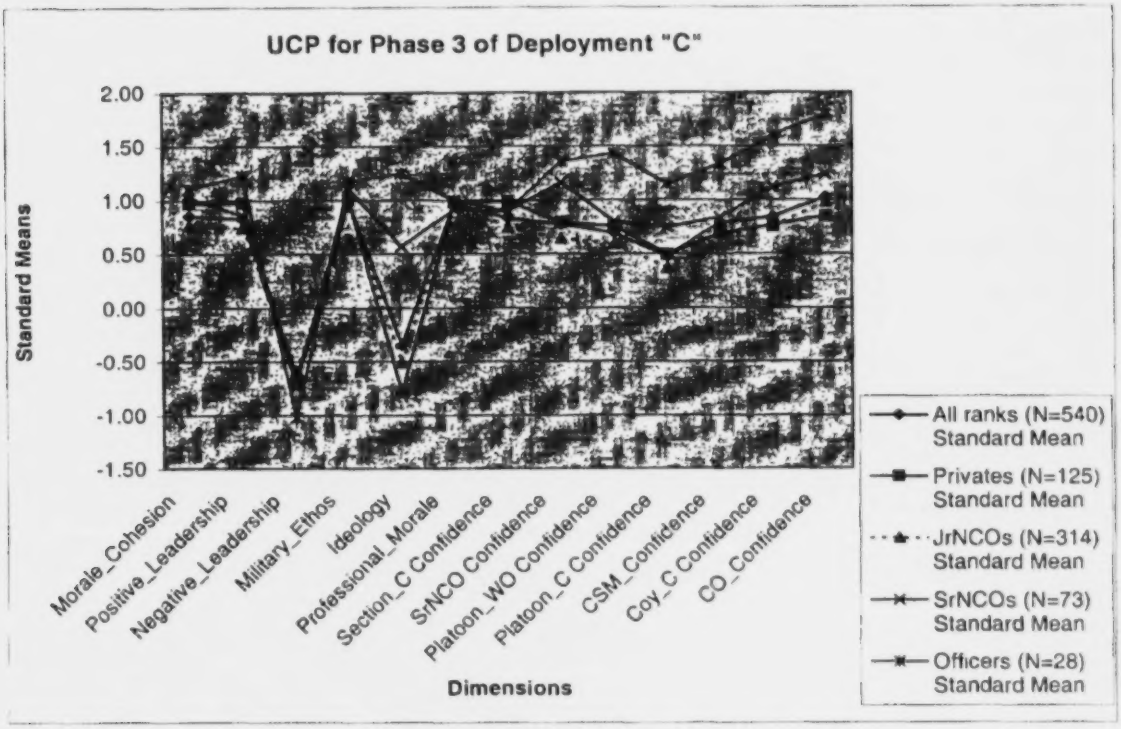

Table 1 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the four respondent rank-levels of survey participants for phase 3 of Deployment "C":

Table 1
Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Four Respondent Rank-Levels at Phase 3 of Deployment "C"

	Respondent Rank				
	All ranks (N= 550)	Privates (N=125)	JrNCOs (N=314)	SrNCOs (N=73)	Officers (N=28)
Morale/Cohesion	**61.69** 10.34	**63.53** 10.16	**60.3** 10.24	**64.36** 9.02	**65.7** 8.13
Positive Leadership	**22.96** 4.84	**23.82** 4.82	**22.45** 4.82	**23.14** 4.89	**25.36** 3.3
Negative Leadership	**14.14** 4.59	**13.78** 4.85	**14.52** 4.61	**13.66** 4.16	**11.88** 3.54
Military Ethos	**27.94** 4.47	**28.02** 4.41	**27.61** 4.51	**28.8** 4.08	**29.21** 4.83
Ideology	**7.97** 3.51	**6.66** 2.85	**7.48** 3.19	**10.72** 3.17	**12.75** 2.66
Professional Morale	**7.94** 1.26	**7.96** 1.26	**7.98** 1.24	**7.83** 1.31	**8** 1.26
Confidence in Section Commander	**11.49** 2.98	**11.97** 3.42	**11.24** 2.9	**11.68** 2.46	**11.68** 2.36
Confidence in Senior NCO	**11.33** 2.7	**11.38** 3.09	**10.94** 2.54	**12.49** 2.18	**13.08** 2.04
Confidence in Platoon Warrant Officer	**11.08** 3.51	**11.27** 3.83	**10.78** 3.49	**11.4** 3.01	**13.29** 2.07
Confidence in Platoon Commander	**10.43** 3.15	**10.48** 3.24	**10.11** 3.18	**11.24** 2.82	**12.45** 1.87
Confidence in CSM	**11.38** 3.54	**11.07** 3.73	**11.37** 3.41	**11.51** 3.62	**13** 3.28
Confidence in Company Commander	**11.53** 2.77	**11.3** 3.1	**11.26** 2.68	**12.36** 2.25	**13.81** 1.42
Confidence in Commanding Officer	**12.07** 2.54	**11.56** 2.57	**11.94** 2.5	**12.72** 2.29	**14.39** 1.1

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 62-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, Confidence in the CSM: 15, Confidence in Company Commander: 15, and Confidence in the Commanding Officer: 15.

Annex D

Unit Climate Profile for Deployment "D"

This annex presents the unit climate profiles and the tables with descriptive statistics prepared on the basis of the results from the UCP surveys at the pre-deployment phase and phase 3 (the late phase in theatre) of Deployment "D". The results are presented according to the rank structure of the surveyed sample.

Figure 1 presents the Unit Climate Profile for the pre-deployment phase of Deployment "D" (before troops' departure for the theatre of operations).

Figure 1. UCP for the Pre-deployment Phase of Deployment "D"

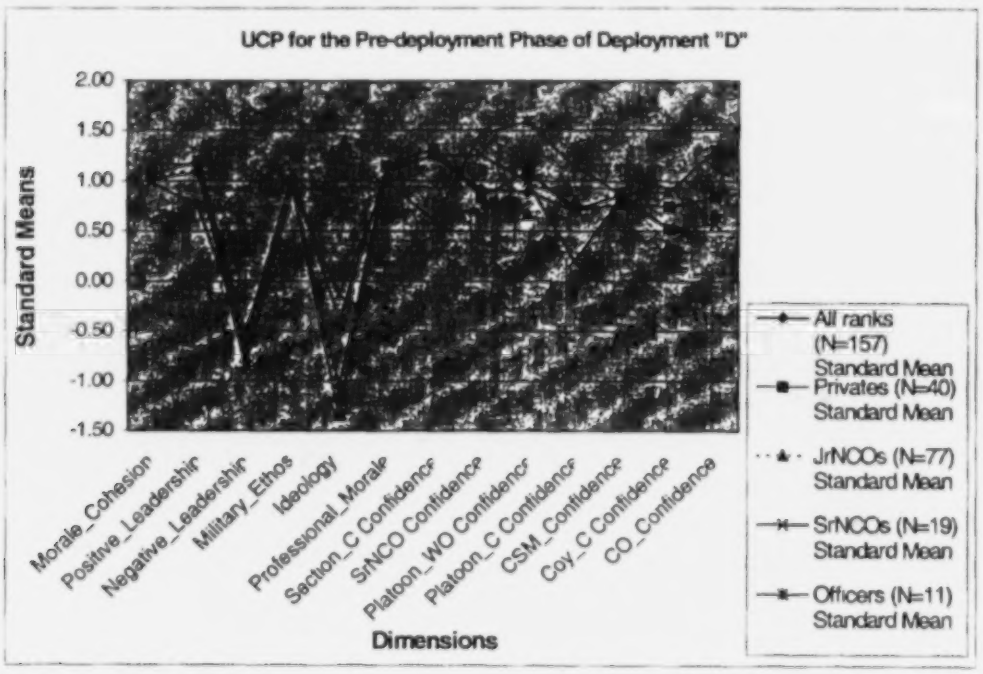

Table 1 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the four respondent rank-levels of survey participants for the pre-deployment phase of Deployment "D".

Table 1
Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Four Respondent Rank-Levels at the Pre-deployment Phase of Deployment "D"

	Respondent Rank				
	All ranks (N= 157)	Privates (N=40)	JrNCOs (N=77)	SrNCOs (N=19)	Officers (N=11)
Morale/Cohesion	**64.31** 9.33	**64.84** 10.13	**64.75** 8.73	**63.81** 9.14	**66.82** 8.33
Positive Leadership	**24.5** 4.31	**25.18** 4.26	**24.68** 4.18	**22.47** 4.4	**24.91** 3.36
Negative Leadership	**13.97** 4.3	**15.00** 5.06	**13.42** 3.83	**14.63** 4.68	**12.91** 4.35
Military Ethos	**27.59** 4.7	**27.53** 5.37	**27.76** 4.22	**28.53** 4.29	**27.4** 5.46
Ideology	**5.85** 2.78	**4.97** 2.13	**5.52** 2.49	**7.84** 3.32	**8.6** 3.41
Professional Morale	**8.24** 1.22	**8.3** 1.34	**8.29** 1.14	**8.17** 1.19	**8** 1.15
Confidence in Section Commander	**12.76** 2.28	**12.95** 2.14	**12.93** 2.34	**12.75** 1.66	**10.83** 2.4
Confidence in Senior NCO	**11.75** 2.47	**11.51** 2.76	**11.63** 2.38	**12.77** 1.36	**13.4** 1.58
Confidence in Platoon Warrant Officer	**11.66** 3.13	**12.28** 2.66	**11.01** 3.57	**12.00** 2.11	**13.78** 1.39
Confidence in Platoon Commander	**11.12** 3.47	**11.13** 3.56	**11.38** 3.44	**9.61** 3.45	**12.43** 1.9
Confidence in CSM	**11.59** 2.48	**11.3** 2.78	**11.65** 2.14	**11.47** 3.01	**11.6** 3.03
Confidence in Company Commander	**10.55** 2.82	**11.23** 2.52	**10.08** 2.99	**10.58** 2.29	**11.67** 2.83
Confidence in Commanding Officer	**11.19** 2.64	**11.51** 2.77	**11.01** 2.67	**10.71** 1.76	**12.9** 1.73

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 62-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, Confidence in the CSM: 15, Confidence in Company Commander: 15, and Confidence in the Commanding Officer: 15.

Figure 2 presents the UCP for phase 3 (late in theatre) of Deployment "D".

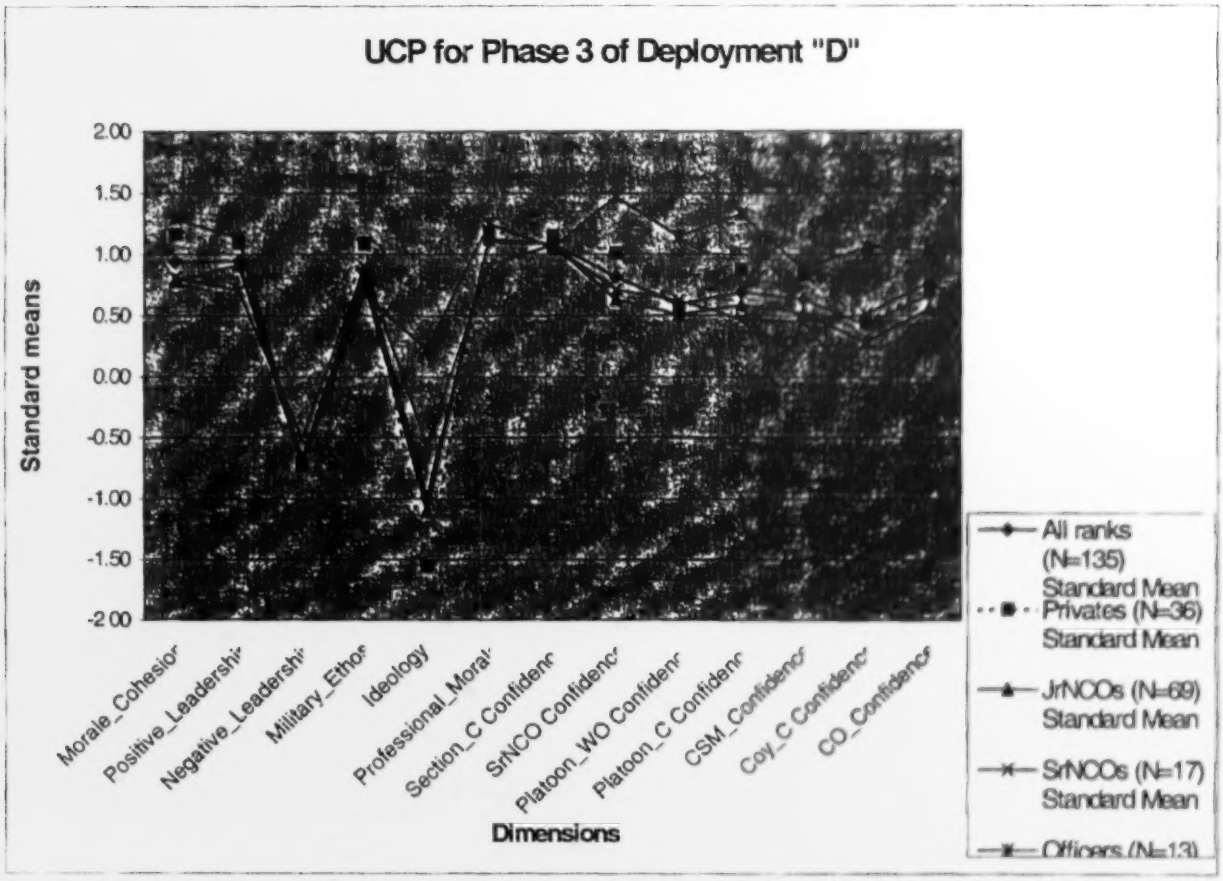

Figure 2. UCP for Phase 3 of Deployment "D"

Table 2 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the four respondent rank-levels of survey participants for phase 3 of Deployment "D".

Table 2
Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Four Respondent Rank-Levels at Phase 3 of Deployment "D"

	Respondent Rank				
	All ranks (N= 143)	Private (N=36)	JrNCO (N=69)	SrNCO (N=17)	Officer (N=13)
Morale/Cohesion	**62.98** 9.55	**66.62** 8.25	**60.55** 9.94	**60.94** 10.08	**68.64** 6.76
Positive Leadership	**23.68** 4.54	**24.56** 3.91	**23.46** 5.07	**22.24** 4.79	**24.82** 2.82
Negative Leadership	**13.98** 4.29	**13.64** 4.29	**13.73** 4.52	**14.94** 4.19	**13.64** 2.8
Military Ethos	**26.99** 4.98	**28.6** 4.35	**26.46** 5.32	**27.29** 5.41	**25.75** 4.16
Ideology	**6.05** 3.11	**4.33** 1.64	**5.71** 2.61	**7.35** 3.57	**9.67** 3.2
Professional Morale	**8.21** 1.26	**8.37** 1.03	**8.25** 1.42	**7.82** 1.19	**8.5** 1.17
Confidence in Section Commander	**12.26** 2.62	**12.46** 2.86	**12.25** 2.78	**12.23** 1.74	**12.17** 2.48
Confidence in Senior NCO	**11.45** 2.79	**12.03** 2.62	**10.89** 2.88	**11.14** 3.16	**13.4** 1.51
Confidence in Platoon Warrant Officer	**10.76** 3.54	**10.66** 3.61	**10.52** 3.71	**10.86** 3.82	**12.44** 2.56
Confidence in Platoon Commander	**10.07** 3.25	**11.63** 3.56	**10.76** 3.25	**10.41** 3.36	**13.00** 2.28
Confidence in CSM	**10.89** 2.94	**11.51** 2.5	**10.55** 3.14	**10.35** 3.43	**11.64** 2.66
Confidence in Company Commander	**10.28** 2.94	**10.33** 3.15	**9.83** 2.97	**10.53** 2.9	**12.18** 2.23
Confidence in Commanding Officer	**11.01** 2.64	**11.18** 3.06	**10.67** 2.75	**11.31** 2.02	**12.09** 2.17

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 62-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, Confidence in the CSM: 15, Confidence in Company Commander: 15, and Confidence in the Commanding Officer: 15.

Annex E

Unit Climate Profile for Deployment "E"

This annex presents the unit climate profile and the table with descriptive statistics prepared on the basis of the results from the UCP survey in the theatre of operations during Deployment "E". The results are presented according to the rank structure of the surveyed sample.

Figure 1 presents the UCP prepared on the bases of the UCP survey conducted in theatre during Deployment "E".

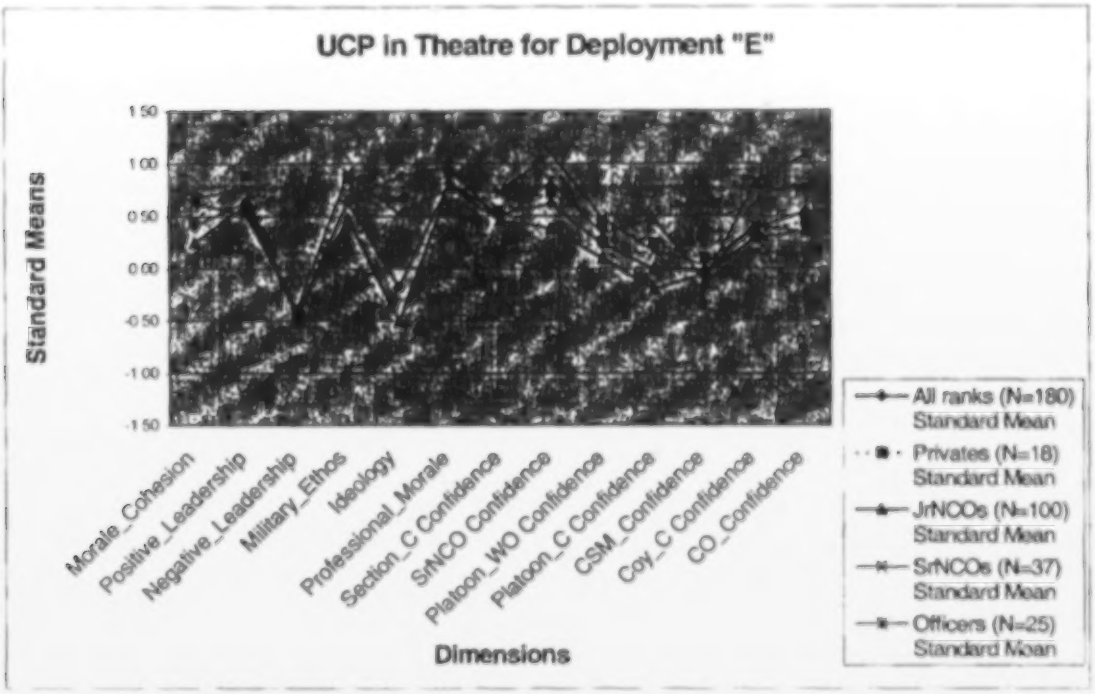

Figure 1 UCP in Theatre for Deployment "E"

Table 1 presents the descriptive statistics (means and standard deviations) for the UCP dimensions for all ranks and at each of the four respondent rank-levels of survey participants in the theatre of operations for Deployment "E".

Table 1

Descriptive Statistics for the UCP Dimensions for All Ranks and at Each of the Four Respondent Rank-Levels in Theatre of Deployment "E"

	Respondent Rank				
	All ranks (N= 181)	Privates (N=18)	JrNCOs (N=100)	SrNCOs (N=37)	Officers (N=25)
Morale/Cohesion	**54.53** 11.57	**55.12** 13.27	**52.01** 11.53	**57.94** 11.09	**58.77** 9.16
Positive Leadership	**21.8** 4.29	**23.28** 3.53	**21.62** 4.34	**21.11** 4.62	**22.54** 4.06
Negative Leadership	**15.4** 4.25	**14.89** 3.61	**15.39** 4.34	**15.75** 4.7	**15.13** 3.85
Military Ethos	**25.42** 4.65	**27.00** 4.17	**24.39** 4.63	**27.37** 4.52	**25.62** 4.13
Ideology	**8.48** 3.55	**5.39** 2.0	**7.48** 3.07	**10.58** 3.37	**11.64** 2.72
Professional Morale	**7.63** 1.19	**7.83** 1.29	**7.57** 1.17	**7.53** 1.35	**7.95** .9
Confidence in Section Commander	**10.56** 2.61	**10.67** 3.79	**10.38** 2.59	**11.18** 2.21	**10.36** 1.69
Confidence in Senior NCO	**10.84** 2.46	**11.17** 2.62	**10.15** 2.46	**12.29** 1.66	**11.48** 2.34
Confidence in Platoon Warrant Officer	**9.7** 3.54	**10.28** 3.68	**9.28** 3.74	**10.44** 2.58	**10.00** 3.75
Confidence in Platoon Commander	**8.98** 3.25	**9.72** 2.85	**8.4** 3.27	**9.49** 2.98	**10.4** 3.42
Confidence in CSM	**8.91** 3.41	**9.28** 3.82	**8.86** 3.29	**9.11** 3.53	**8.65** 3.64
Confidence in Company Commander	**10.15** 2.71	**10.00** 3.46	**9.87** 2.63	**10.2** 2.77	**11.45** 1.99
Confidence in Commanding Officer	**10.61** 2.42	**10.35** 2.21	**10.16** 2.34	**10.06** 2.42	**12.24** 2.15

Note: Cell-entries represent the means and standard deviations for the climate dimensions measured with the 62-item UCP. The means are shown in bold and standard deviations in normal type-font. The maximum values for the UCP dimensions are the following: Morale/Cohesion: 80, Positive Leadership: 30, Negative Leadership: 30, Military Ethos: 35, Ideology: 15, Professional Morale: 10, Confidence in Section Commander: 15, Confidence in SrNCO: 15, Confidence in Platoon/Troop Warrant: 15, Confidence in Platoon Commander: 15, Confidence in the CSM: 15, Confidence in Company Commander: 15, and Confidence in the Commanding Officer: 15.

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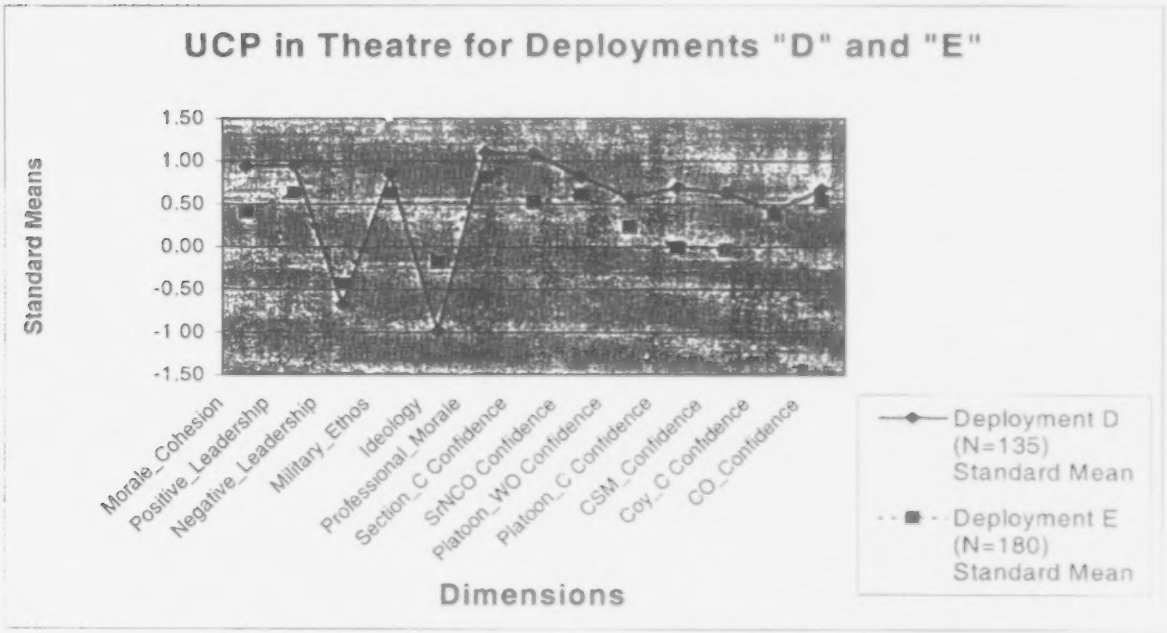
Annex F

Unit Climate Profiles for Deployments "D" and "E"

This annex presents the unit climate profiles for two Canadian contingents deployed on operational missions. The intent for the UCP questionnaire is to be used within a unit. Inter-unit comparisons, as the one presented in the figure below are made solely for research purposes. Such comparisons are made in an attempt to understand the differences in the dynamics of the unit climates as well as to explore specific to the mission situational factors that might have an impact on the unit climate and its dimensions.

Figure 1. UCP in Theatre for Deployments "D" and "E"



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14. ABSTRACT

(U) The importance of the relationship between leadership and military effectiveness has led the Operational Effectiveness Section of the Directorate of Human Resource Research and Evaluation (DHRRE) to develop the Unit Climate Profile (UCP) Questionnaire. This report provides a brief overview of the conceptual framework within which the UCP was developed as well as brief history of the development of the instrument and definitions of the climate dimensions that it measures. Three major questions raised in earlier research using the UCP were explored in this report.
1) Do unit climate profiles tend to be consistent across deployments and mission theatres?
2) What is the relationship of leadership, morale/cohesion and confidence in leadership and are these relationships consistent across deployments and rank levels?
3) What are the unique effects of positive and negative leadership practices on unit-level morale/cohesion?

Overall, results presented in the annexes to this report indicated that unit climate profiles were fairly consistent across deployments. Moreover, the climate profiles for the different rank categories (e.g., enlisted vs. officers) followed similar patterns. Results of multiple regression analyses presented here suggest that positive leadership practices were the most important factor related to morale and cohesion levels within a unit, regardless of deployment phase. Thus, positive leadership practices might be a potential resource to deal with the decrease in morale/cohesion after the return of the troops to Canada.

These and other findings in the present study are discussed in terms of the potential of the UCP to be used as a diagnostic tool and thus to assist commanding officers in their decision-making regarding the operational readiness of their troops. As well, the findings are discussed in terms of the usefulness of following the dynamics in the confidence in different levels of leadership across a deployment cycle for stimulating efficient military performance.

15. KEYWORDS, DESCRIPTORS or IDENTIFIERS

(U) Unit Climate Profile Questionnaire; deployment;leadership; morale; cohesion; confidence in leadership

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